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THE RELATIONSHIP BETWEEN DISEASES OF THE EAR AND THOSE OF THE EYE*

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I must felicitate the members of this Section on the excellency of our program for this meeting, giving due credit to our worthy Secretary, whose ability in this direction is certainly most commendable. It leads me to urge the adoption of the suggestion from one of our former Chairmen as to the advisability of retaining, for several years, the same man in this office and thus assuring the Section the prospects of a well-arranged and scientific program.

This is the first time that we have met in this far-famed western municipality and, while the workers in oto-laryngology of this Section are known to us through medical literature, we are glad to-day to recognize the imprint of their personality.

It has been a time-honored custom for your Chairman to deliver an address at the opening of our Section meetings, but in the last few years such officers have handled with eminent literary thoroughness every phase of the history and progress of the oto-laryngologic work, so that there is little left in the field which can be considered otherwise than personal views. For some time past much has been written concerning the relationship between diseases of the eye and the nasal cavities with their accessory sinuses, but with the exception of the ophthalmoscopic appearances of the optic disk in cases of suspected brain abscess from middle ear suppuration and the question of nystagmus in labyrinthine involvement, the articles which have appeared in our medical literature on the relationship between diseases of the eye and ear have been quite limited in number. The advanced conservative radical treatment of diseases of the nasal cavities has certainly had a very marked influence in lessening many diseased conditions of the eye, notably that of the lacrimal apparatus, for where we were accustomed to see dozens of patients sitting around our clinic with probes in their lacrimal ducts, now we see but half the number. This is attributed to the attempt being made to give the nasal cavities freer ventilation by the removal of all obstructions.

On the other hand, with the exception of a few scattered articles, notably those of Moos, Rohrer, Rollet and Park Lewis, there have been but few clinical presentations of the relationship between diseases of the eye and those of the ear.

It has only been within the last few years that the teaching of otology in our medical schools has been given an independent chair or an association with rhinolaryngology, as previous to this time it was quite universally associated with the chair of ophthalmology, especially in the smaller medical schools, and even to-day such exists in some of the medical colleges of this country. While such a relationship seems anomalous in the light of our present studies in oto-laryngology, there nevertheless exist some clinico-pathologic grounds for this condition, as is exemplified by the reports from those whose daily practice embraces diseases of both the eye and the ear.

Some vague suggestions have been heard of preferring to limit the chairmanship of this Section, as in other Sections, to men whose practice lies exclusively in that domain for which the Section stands. In other words the Chairman of this Section should be a man whose work is exclusively oto-laryngologic, just as the Chairman of the Section on Ophthalmology should be one whose work is exclusively ophthalmologic. Such ideas to my mind would be detrimental to the best interest of our Section, for this national Association embraces in its membership those whose life work and practice are confined to the small as well as to the larger municipalities, and it is only in the largest cities that a man's clientele is sufficient to allow him to confine his practice to one single organ of the human body. Consequently if such a rule were adopted, our chairmen could only come from the largest cities, while the men from smaller places, doing equally as good work, would be considered ineligible. Such ideas may be very good in theory, but in practice they are certainly not to be commended, for at the present time there are few men doing ophthalmologic work who do not also embrace the oto-laryngologic in their practice, and vice versa this is true but to a smaller extent.

While it is a fact that the oto-laryngologist may work almost independently of the ophthalmologist the reverse is certainly not the case, as has been forcibly demonstrated during the last few years. No man can be a thorough ophthalmologist without having considerable knowledge of oto-laryngologic diseases. He who daily observes diseases of the eye, ear, nose and throat, who studies closely the correlationship of these organs with certain diseased manifestations in each and the end result of their treatment, is certainly more capable of making a correct diagnosis than the man who has to consult a colleague, who in turn only sees and draws conclusions from certain local appearances and who can never thoroughly imbibe the history of the case. Such pioneer workers in ophthalmology as Knapp, Greuning, Sattler, Kipp and others recognized this fact years ago and became thoroughly familiar at the same time with oto-laryngologic diseases. I hope, therefore, this Section

* Chairman's address before the Section on Laryngology, Otology and Rhinology of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

will maintain broader views than that only men who practice exclusively oto-laryngology should be selected as its Chairmen.

With this preface I wish to review in a very cursory manner the literature bearing on the relationship between diseases of the eye and the ear, and as I do not desire to occupy much time in this address the subject must of necessity be far from exhaustive.

When we recognize the fact that medical literature teaches us it was the ophthalmologist who first pointed out the presence of nystagmus in certain diseased conditions of the middle and internal ear, a subject which of late has occupied so much of the otologic discussions, it seems quite fitting that we should look for a moment into the pathologic relationship between these two organs. In taking up the literature of the subject, I have availed myself of all the writings at my command and have quoted freely from them, in order that we may clearly recognize the importance of workers in oto-laryngology being familiar with ophthalmology just as the reverse is even more to be desired.

I. AFFECTIONS OF THE EYES WHICH HAVE BEEN CONSIDERED THE CAUSE OF CERTAIN AURAL DISTURBANCES

In 1898, Rohrer, in a very exhaustive article on this subject, urged a very ingenious embryologic and histologic relationship between the eyeball and middle ear. He makes the cornea homologous with the promontory and the pupil with the labyrinthine windows; the conjunctival sac with the middle ear and the nasal duct with the tuba Eustachii; the tear glands with the acinous glands of the tube, the drum membrane homologous with the membranous portion of the eyelids.

Ostmann, in 1897, called attention to the fact that the eye is much more commonly affected by the ear than vice versa. Affections between these organs may be induced through reflex radiation and combined stimulation of the motor fibers or indirectly through otitic diseases of the brain and cerebral meninges. The nerve tracts which permit these relations between the eye and the ear according to this author are—the trigeminal, facial and acoustic nerves, the latter giving rise to a great variety of reflex effects on the eye according to the involvement of the vestibular branch (static function) or the true auditory nerve, the cochlear branch. Both the eye and the ear are abundantly supplied with sensory fibers from the trigeminus, accounting for the pain in the eye that is felt in severe middle ear suppuration. The facial nerve establishes a communication between the eye and the ear by enervating the stapedius muscle on the one hand, and the orbicularis palpebrarum on the other. It is for this reason that a deep, humming sound in the ear is perceived on tightly shutting the eyelids, which is interpreted as a muscular bruit originating from the stapedius.

As a corollary to this, Moos has reported a case of a woman 60 years old, who had a ringing in her left ear whenever she put on her nose glasses; when she removed them the noise disappeared. This was attributed to a reflex spasm of the stapedius muscle.

Dr. Geo. Stevens, in 1881, before the International Medical Congress, reported several very interesting cases in which aural tinnitus was diagnosed as due to a muscular imbalance in the eyes, relieved by graduated tenotomies of certain extra-ocular muscles, and Dr. Theobald, in 1909, before the Section on Ophthalmology of this Association, reported four cases, besides having observed many others where certain aural disturbances such as tinnitus, muffled and stuffy sounds, and even vertigo were entirely relieved by the correction of definite eye-strains. I myself had been skeptical of this latter statement, but only within the last few months a case came under my own personal observation where severe tinnitus aurium was relieved by the proper correction of a refractive error.

A case has also been reported by Rollet in which a tinnitus was produced whenever the ophthalmoscope was used in the eye on the same side and which ceased immediately after.

D'Arsonval has reported deafness for two hours following the looking at a Voltas light for a few minutes and he believes that it was due to the irritation produced by the ultra violet rays.

Moos, in 1898, reported a case of bilateral panophthalmitis following bilateral cataract extraction which was followed by meningitis and finally by complete bilateral deafness—a case of direct extension of the pathologic process rather than reflex radiation.

De Capdeville has reported two very unique and interesting cases: The first was in a blacksmith into whose left eye had been driven an iron chip. The latter produced considerable traumatism, but was finally extracted. Severe inflammation followed, however, and on the twentieth day after the accident, the left ear began to be affected with tinnitus and deafness. Nothing abnormal could be discovered about the ear. Finally the eye was enucleated and on the next day all subjective phenomena in the ear had disappeared and the hearing became normal. In the second case he reported that of a woman who four months after a cataract extraction showed some ciliary injection and later severe irido-cyclitis with supraorbital pains. Following a subsidence of the acute pain, the ear on the same side became affected with tinnitus and diminution of hearing, so much so that finally the hearing disappeared entirely and the eye symptoms continued. Enucleation was eventually performed which relieved the tinnitus and vertigo, but the hearing remained defective.

To these cases can be added those of Dransart: In the first case a tinman, 28 years old, was injured in the left eye by a chip of iron. This latter was removed, but traumatic changes were left. Later the patient received a blow in the right eye and this was followed by deafness in the right ear. Later an iridectomy was made in the right eye which was followed by improved hearing on the same side.

The sixth case reported is interesting and even startling: A journalist, 56 years old, had entropion of the right lower lid. At the request of the patient this was operated on with good results. Following this, the patient, who had been deaf since his eighth year, reported that he could hear perfectly well.

Bouchut relates the case of a young man who was struck by a ball over the right eye, producing a contusion and finally dimness of vision. This was followed by almost complete deafness in the corresponding ear. These cases certainly seem unique and must be considered in the light of severe reflex irritation rather than through any direct pathologic relationship.

With the exception of the case referred to, I have never seen any other in which aural disturbances could be considered as due to pathologic conditions of the eye, but we are compelled to recognize the fact that such exist, for they have been reported by competent observers.

II. AFFECTIONS OF THE EAR WHICH HAVE BEEN ATTRIBUTED AS THE CAUSE OF CERTAIN OCULAR DISTURBANCES

Here we realize that every ophthalmologist should be familiar with diseases of the ear if he wishes to be thoroughly competent to make a complete diagnosis. This subject is too extensive to be even partially handled in an address like this, and in making a review of the literature embracing this point I shall be able to barely mention its salient features.

During the last two or three years our medical journals have been filled with clinical reports and discussions on labyrinthine diseases of the internal ear and especially concerning the question of nystagmus as a means of diagnosis. No one could underestimate the wonderful scientific work which has been done by Barany and others as an aid to the differential diagnosis of internal ear diseases and no one knows better than the ophthalmologist the difficulty and uncertainty which surrounds the question of nystagmus and how frequently it can be made manifest in diseases other than those of the internal ear. The aurist and ophthalmologist must work together if this symptom is to be recognized as one of positive value; this again teaches us that it is of distinct assistance for the aurist to be a good ophthalmologist.

The effect of labyrinthine changes on the eye and that of brain abscess, has been too extensively considered and discussed for further comment in this address. Consequently I shall exclude these questions and only mention such as are not so familiar in aural and ophthalmologic literature.

Affections of the ear, especially middle ear diseases, have long been known as capable of giving rise to ocular paralyses. In the majority of cases the paralysis involves the external ocular muscles on the side corresponding to the otitis and it appears independently of meningitic symptoms.

The study of the anatomico-physiologic relations between the organ of hearing and that of sight readily explains such a relationship of the ear to the ocular apparatus, but the difficulty begins when we try to interpret the symptoms and to establish the pathogenesis of ocular palsies of otitic origin. According to Urbantschitsch, they were first vaguely considered as reflex disturbances. Later under the influence of the microbic theories, according to Berger, they were attributed to infectious neuritis due to toxins produced by ear infection. Numerous cases have been observed, however, in which the paralysis very probably owes its origin to the direct propagation of an infectious lesion—Gradenigo, Terson and others.

Of course, these remarks are not meant to cover the grave cases of otitic suppuration, giving rise to severe cerebral complications (abscess of the brain, meningitis, intracranial thrombo-phlebitis) in which the infectious origin cannot be doubted. The oculomotor paralysis in these cases is merely a side phenomenon of secondary importance.

The frequent occurrence of paralysis of the sixth pair in affections of the middle ear is accounted for according to most authors by the special relations between otitis and this nerve through the carotid canal, while Perkins believes that the majority of these cases are due to osteitis of the petrous tip.

A series of noteworthy contributions to this subject was published by P. Bonner who, in 1893, called attention to the labyrinthine oculomotor connections and gave as labyrinthine symptoms the oculomotor disturbances through radiation, such as strabismus, diplopia, miosis, etc. Bonner, in the same year, also reported an observation on a patient who suffered repeatedly from disturbances of accommodation in the right eye after strong injection into the right ear for the removal of cerumen and even became presbyopic for several hours, all of which disappeared with the removal of the cerumen. While the occurrence of reflex paralysis seems to have been demonstrated clinically as well as experimentally for the external recti of the eye, the problem is not so clear in cases of the other muscles.

De Lapersonne observed a case of paralysis of the superior oblique which he thinks referable to the same origin. Not only the extrinsic muscles of the eye, but also the intrinsic muscle tissue may present reflex paralysis in consequence of a lesion. Paralysis of accommodation has been reported (Boerne Bettman) as also mydriasis and myosis. Such an occurrence does not even seem to require a serious reaction on the internal ear such as takes place in the presence of vertigo, severe pain, tinnitus and deafness. A weak irritation sometimes suffices and the starting point may be the external ear. Sabrazes reported a case on unilateral mydriasis caused by the presence of a fragment of barley in the internal auditory canal. An analogous case was published by Brandelier; the foreign body was cerumen around a glass bead.

According to Moos, an infectious process of the ear may be propagated from the petrous bone to the meninges, along the trigeminus as far as the Gasserian ganglion, and according to Wiethe, by way of the tympanic and pterygoid venous plexus as far as the ophthalmic vein, where it gives rise to an orbital abscess.

Urbantschitsch has reported a case where dilatation of the pupil was induced in a patient by the rapid change of air pressure in the tympanic cavity, and cases where a suppurative process of the middle ear has influenced the dilatation and contraction of the pupil have been reported by Moos, Schwartze, Gelle and Gervais. Certain observations as to reflex action on the muscles of the eye-lid have been made.

In a case of Desterne a single air douche of the middle ear was followed by the cure of a twitching of the right eyelid which had persisted for over a year. Schwartze mentions the cure of a ptosis after the removal of an ear polyp. Blepharospasm due to the introduction of an ear speculum was noted by Buerkner, and Buzzard observed blepharospasm due to a plug of cerumen in the auditory meatus.

Ostmann, while making mention of these reported cases of seemingly reflex paralysis and spasm, does not believe in the reflex irritation theory, but thinks that such is rather due to intracranial complications. Kipp, as early as 1884, reported two cases of metastatic panophthalmia in connection with middle ear suppuration and this very observant ophthalmologist was one of the first men to call attention to the symptom of nystagmus in connection with severe middle ear diseases—a fact which should always be remembered in discussing the history of labyrinthine diseases.

In this connection it should also be mentioned that Kitamura has reported a case of metastatic ophthalmia as a sequel to sinus thrombosis. Urbantschitsch, in 1908, contributed a very long and exceedingly interesting article on "Subjective Acoustic Phenomena and Subjective Visual Concepts," in which he dealt with sensations of sound and color which accompany unconscious cerebration. Various color sensations may modify the subjective perception of musical composition. Simultaneous excitation of the two eyes by different colors

produce changes in the subjective hearing which do not occur with one. I have a friend on whom certain high notes produced the sensation of violet and many such instances could be mentioned of this physico-psychic phenomenon.

I cannot close this paper without mentioning an article by Professor Peters of Rostock, who published in Vol. 36 of Knapp's *Archives of Ophthalmology* an article on miner's nystagmus in which he undertook to show that this condition could be well accounted for by the influence of the vestibular apparatus of the ear on the movements of the eye, particularly nystagmus. He shows good authority for such ideas as founded on the experiments of Breuer, Ewald and others. That nystagmus is produced through irritation of the semicircular canals is now fairly well established, as the number of cases reported in the last two years by otologists will testify; and the prominence of this symptom as shown by Barany and others as a diagnostic sign of vestibular irritation—Peters' argument—is by no means illogical and certainly opens a new field for further investigations.

In conclusion, let me urge otologists as well as ophthalmologists to bear in mind these relations of which I have spoken, for my own observation leads me to believe that many mistaken diagnoses have been made by not considering the interdependence of the various organs of the body.

THE LEUKOCYTOLOGY OF TYPHOIDAL DISEASES, AS A GROUP-PHENOMENON WITHIN THE TYPHOID-COLON FAMILY OF BACILLI (TYPHACEÆ)*

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Typhoid and paratyphoid bacilli, the bacillus of Gärtner, the paracolon, colon and dysentery bacilli belong to one family.[1] Botanically, they are branches of one tree. There are no permanent, fundamental, cultural[2] or morphologic differences between them.[3] The identification of a single member of this group by any special culture-medium has not been realized. The primordial kinship and common ancestry of these allied germs is demonstrable in many ways. It is only by acquired or biochemical properties that members of this group differ from each other. The Widal reaction, as Durham first showed, is only electively specific, not strictly so in the sense of Widal's and Buchner's words. The teaching of exclusive specificity in medicine produced not only passive, *laissez-faire* clinicians and therapeutic nihilists, but also a crop of specific public hygienists. Pasteur's conception of a specific pathogenic agent for infectious diseases shows the inspiration of a genius, Richet's anaphylaxis and Bordet-Gengou's complement deviation are of incontestable benefit to mankind, but somehow these several discoveries have not accomplished what they seemed to promise. The conditions under which a germ of a given group becomes pathogenic for man are as yet very obscure; even the rules of immunity as applied to anaphylaxis stand on their head.[4] It is certain that our reasoning on the ground of the strictly specific pathogenesis of germ diseases is too narrow. Anatomic and clinical phenomena do not justify the strict separation of typhoid and paratyphoid fevers.[5] Their epidemiology belongs together.[6]

I believe that the epidemiology of all infectious diseases, their morbidity and mortality statistics, their pathogenesis, their pathology, and clinical manifestations will be better understood when we shall study them collectively by groups, rather than individually. Just as in qualitative chemistry, there is shown in qualitative bacteriology[7] a distinct arrangement into botanical families. The law of periodicity of elements as propounded by Mendeleeff[8] in 1869 is applicable to the realm of microorganisms. Even now the laws of chemistry begin to dominate bacteremic processes.[9] That such reasoning is logical is proved by the following:

Germs, like chemical elements, can be arranged into definite groups, because, first, their individual members are morphologically similar; second, they feed or may eventually be made to feed[10] on the same culture-media; third, they show a distinct racial attitude toward oxygen and nitrogen; and fourth, their biochemic products bear plainly the stamp of family-reactions, as proved by Pfaundler's co-agglutinins, and by their leukocytic reactions. Andrewes[11] has found that guinea-pigs are co-sensitized toward paratyphoid germs and colon bacilli by previous injections of typhoid bacilli. From the standpoint of histochemistry and histopathology the classification of infectious diseases into groups suggests itself. The serum and tissue reactions of the typhoid-colon group, of the anaerobic intestinal flora, and of the streptopneumococcus family are group phenomena. The leukocytology of these infections furnishes the biochemical proof of the generic kinship between the members of these bacterial races. Clinically, this grouping of infectious diseases is very striking and, in my opinion, constitutes another proof of the existence in nature of the cyclic or periodic arrangemnt of germs — of living, organic molecules — parallel to that discovered by Mendeleef in regard to chemical elements. It is not unlikely that the teleological scheme of this grouping exists for the induction, maintenance and consumption of the circulation of elements within the human body. The generic, racial or electively specific activity of the typhoid-colon group is spent on the growth and the decay of the protein molecules in the intestines.[12]

As to whether infection and immunity in man show evidences of an evolutionary or mutating character of germs, and of their reactions on the host, I cannot discuss at this time. Suffice it, now, to take up the present status of pathogenesis, and clinical and epidemiologic significance of the leukocytology of typhoid and paratyphoid fevers.

My object in writing this article is, first, to enounce and promote the group study of typhoid infections;

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* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Vallet, G., and Rimbaut, L.: Les bact. intermédiares de la famille Coli-Eberth, Arch. de méd. expér., March, 1910, xxii, No. 2.
2. Rubener: The Importance of Paratyphoid Bacilli, Berl. klin. Wchnschr., June 13, 1910, p. 1008.
3. Müller, Reiner: Ueber Paratyphus, Deutsch. med. Wchnschr., Dec. 22, 1910, p. 2397.
4. Besredka, A.: Anaphylaxis, Handbuch der Immunitäts-Forschung, 1911, Supp. vol. i.
5. Rolly, Fr.: Zur Paratyphus Frage, München. med. Wchnschr., March 14, 1911, p. 556.
6. Bainbridge, F. A.: Epidemiology of Typhoid and Paratyphoid Fevers, Proc. Roy. Soc., February, 1911, iv, No. 4.
7. Jackson, D. D.: Classification of the Bacillus Coli Group, Jour. Infect. Dis., March 6, 1911, p. 246.
8. Mendeleeff, D. I.: A Conception of Ether, St. Petersburg, 1869, New Translations by George Kamensky, London, 1905.
9. Horovitz, A.: Biochemical Rôle of Bacteria, Arch. d. Sc. biol., St. Petersburg, 1910, xv, No. 1.
10. Bradley, Burton: Biochemical Characters of the Bac. Typhus, Proc. R. Soc., February, 1911, iv, No. 4, p. 43.
11. Andrewes, F. W.: The Leukocytes in Infection and Immunity, Lancet, June 25, 1910, p. 1739.
12. Fisher, Van Loghem Citing: Varieties of Typhoid and Allied Bacilli, Centralbl. f. Bacteriol., Feb. 1, 1911, lvii, No. 5.

second, to show why we should suspect and diagnose them earlier than hitherto; third, to discuss the part played by the tissue-cells in the production of group-characteristics versus the specific theory of one individual germ; and fourth, to revaluate the significance of the Widal reaction.

The study of the individual members of the typhoid, paratyphoid colon group has demonstrated a marked discrepancy between the morbidity and mortality statistics of these affections. Indeed, Hazen's[13] theorem of the Mills-Reinke phenomenon is an attempt to cover up this breach in the epidemiology of these water-borne diseases, the generic relation of which was recognized by a layman before clinicians thought of it. The classification of water-borne and food-borne diseases, however, should be based on clinical evidences mainly.[14] The early bacteriologic diagnosis serves essentially to identify the group to which the germ belongs,[15] cultural tests being insufficient and serologic reactions occurring late in the disease. In order to diagnosticate a case of typhoid or paratyphoid infection early we must suspect it earlier, that is, even before clinical evidences have become manifest. In typhoidal affections the pre-clinical symptoms consist in the bacillemia and the leukocytic changes, which, presupposedly, must have existed for some time, perhaps for two or three days, before the onset of any subjective symptoms. If at all applicable, the curative vaccine therapy[16] or the medical abortive treatment of typhoid fevers must be applied very early to induce bacteriolytic immunity, in view of the absence of antitoxic and phagocytic antibodies as observed by Vaughan and his school.[17] The end of the first week of typhoid fever is called the diagnostic stage by O. Naegeli.[18] It is then that the leukocyte counts are most valuable, as I have shown before.[19] The early stage of all typhoid infections is the most infectious, because the germs are very numerous in the circulating blood and excreta during the first stage of the disease.[20]

Typhoid bacillary sensitization is a protein poisoning. The manner of the intoxication, rather than its nature, determines the peculiar lymphoid tissue and leukocytic changes of typhoid fevers. The tissues furnish the characteristic reactions rather than the germ, and they do so in accordance with the manner in which the alien protein is brought in contact with them. This would account for the clinically polymorphous character of typhoidal and paratyphoid affections. Laurent[21] holds that the number of successive generations of bacilli decide on the severity of the infection. It is probable that the negative phase of antityphoid vaccination,[22] the negative phase of leukopoiesis in rabbits, as observed by Andrews, and the incubation of typhoid fevers in man are illustrations of one and the same process.

The revaluation of the Widal test is imperative. This reaction is less specific than formerly believed, but its scope is widening since Pfaundler's work. Its late appearance is its chief drawback, and, owing to the indefinite onset of the disease, an early Widal reaction should always be viewed with suspicion.[23] Its value as a means of group-diagnosis has increased, while in specific diagnosis it has admittedly lessened. The pre-Widal diagnosis of typhoidal diseases should be the rule, not the exception. Paratyphoid affections are seldom recognized in practice and are often classed as ptomain poisoning, gastric fever,[24] mucous gastritis[25] or walking typhoid fever. The existence of intermediate forms of the typhoid colon group, the insensible gradations from the bacillus of Eberth to the bacillus of Escherich, and the exceedingly important pathogenic, hematologic, epidemiologic and clinical characters, varying in crescendo or diminuendo with the distance of a given germ from the top or the foot of his family tree, is unfortunately but little known in medical books.

The incentive for this work grew on me in the course of the last six years, while making routine blood examinations on all of my patients. The value of careful hemanalyses[26] has been recognized by several authors, especially in differential diagnosis.[27] Other reasons impelling me in this line of investigation were the following considerations: Clinically, it is characteristic of the members of typhoid-colon dysentery group to produce ulcers, owing to the lymphotoxic effects of their poisons. While the ulcers of typhoidal and dysentery group show a distinctly segmental intestinal localization, the colon bacillus produces ulcers of the stomach (F. B. Turck), appendix and large bowel. The higher in the scale of this group a given bacillus is, the longer the incubation, the greater the crescendo of negative leukopoiesis, the more marked the immunity, the less the facultative saprophytism and the more pronounced the clinical condition known. I am referring to the bacillus of Eberth. With a preliminary generalizing survey of the typhoid-colon group it will be easier to understand the leukocytology of typhoid and paratyphoid fevers. The diagnostic and prognostic significance of complete successive blood-counts will then explain itself. It is to be hoped that cytology may clear a situation which has lasted for thirty years, and for which twenty years of humoral pathology have not accounted. Typhoid fever does not spontaneously occur in lower animals. The typhoid peritonitis of guinea-pigs is no parallel to typhoid fever in man.[28] Experimental bacteriology is of little use here. Combined bedside and leukocytic data furnish the safest basis for clinical reasoning and for a correct attitude toward the pathogenesis of infectious diseases. The leukocytology of typhoid and paratyphoid fevers is another proof for the distinct generic relations between the members of this group. It throws light on the reciprocal relation between incubation and immunity. The pathogenesis of the typhoid blood-picture must not be ascribed to the endotoxins *per se*, but to the lymphoid tissue reactions which they call forth. Any chronic tissue lymphocytosis may produce a similar blood-picture, for instance, the first stage of tuberculosis and splenic anemia. The generalized endothelial and lymphoid cell hyperplasia described by Mallory,[29] Edsall,

13. Sedgwick-McNutt: The Mills-Reinke Phenomenon, Jour. Infect. Dis., Aug. 24, 1910, p. 489.
14. Brion, Arthur: Typhus-Paratyphus, Modern, Clinical Medicine, 1910, p. 60.
15. Rolly, Fr.: Diseases Produced by the Paratyphoid Bacilli, Deutsch. Arch. f. klin. Med., 1906, lxxxvii, p. 595.
16. Richardson, W. W.: Treatment of Typhoid Fever, Mass. Gen. Hosp. Rep., 1908-1909, ii, 97.
17. Vaughan, V.: The Specific Treatment of Typhoid Fever, Am. Jour. Med. Sc., September, 1908, p. 330.
18. Naegli, O.: Ueber das Erkennen Typhus-ähnlicher Krankheiten, etc., Cor.-Bl. f. schweiz. Aerzte, 1902, xxxii, 109.
19. Hultgen, J. F.: The Pre-agglutination Diagnosis of Typhoid and Paratyphoid Fevers, Tr. Chicago Pathol. Soc., August, 1909, p. 270.
20. Von Ivigalski and H. Conradi: Ztschr. f. Hyg. u. Infect. Krankh., 1902, xxxix, 298.
21. Laurent, E.: Virulenz-Problem der pathogenen Bacterien, Fisher, Jena, 1910.
22. Vincent, H.: Typhoid Vaccination, Bull. d. l'Acad. de méd. de Paris, Jan. 24, 1911, p. 63.
23. Drysdale, J. H.: The Agglutination Reaction, Allbutt's System of Medicine, 1905, i, 693.
24. Schlegelmann, Albert: Febris Gastrica, München. med. Wchnschr., 1911, No. 6, p. 299.
25. Schneller: Febris Gastrica, München. med. Wchnschr., 1911, No. 10, p. 515.
26. Cabot, R. C.: Differential Diagnosis, Phila., 1911, p. 406.
27. Tompkins, McGaw: Atypical Onset of Typhoid Fever with Report of Cases, Old Dom. Med. Jour., March 19, 1911, xii, No. 3.
28. Metchnikoff, E., and Besredka, A.: Recherches sur la Fièvre Typhoide Exnér., Ann. de l'Inst. Pasteur, March, 1911, No. 3.
29. Aschoff: Pathological Anatomy, 1909, ii, 353.

Longcope[30] and others and observed by Virchow, depends on the manner of intoxication, rather than on the nature of the intoxicant. Indeed, the colon bacillus produces a disease not only clinically identical with typhoid fever, as Coleman and Hastings report,[31] but also with the blood-picture as that observed in Eberthian infection.

The material for the present report consists of cases of typhoid and paratyphoid fever in my private practice and from the Englewood Hospital. The patient's leukocytes were examined every two or three days during the course of the disease. In this way I was able to secure from two to ten and twelve total and differential leukocyte counts for each day, with the exception of the first two days. This is, of course, quite excusable in view of the usually insidious and indefinite onset of typhoid fevers. From the literature I could gather only total white blood-counts, differential analyses being so rarely and poorly made that I had to abandon their use in this report. As many blood examinations were made as the patients and circumstances would allow. Arneth's method of establishing by nucleo-analysis a polynuclear blood-picture was not used, although most of the writers in this country follow this investigator. I consider it very important to examine *in toto* the white blood-life of the patient, by estimating the hemoglobin, securing the total leukocyte number, and dividing the white cells into four classes, the polymorphonuclear, the small mononuclears, the large mononuclears with the transitionals, and the eosinophils. The basophils were omitted as of little value. Care was taken not to make the blood-specimen right after a cold bath or cold sponge as Winternitz and Thayer cautioned.[32] The following nomenclature was thought more accurate, more simple and descriptive than either Arneth's[33] or Sondern's. For the total number the terms "normocytosis," "hypercytosis" and "hypocytosis" were used. In the differential counting I arranged the white cells into the polynuclear, mononuclear, mixed or di-cytosis, according to the percentages of either the polynuclears or mononuclears, or of both, being above or below the normal proportions. The reasons for this I have explained elsewhere.[34] The normal blood-picture being a dinormocytosis, I was able to establish the leukocytic alterations during the entire course of typhoid and paratyphoid fever. The physiognomy of this continual blood-picture may be summed up as follows:

Polynuclear hypercytosis (several hours, probably).
Polynuclear normocytosis (probably lasts only a day).
Polynuclear hypocytosis (up to 10-15th day).

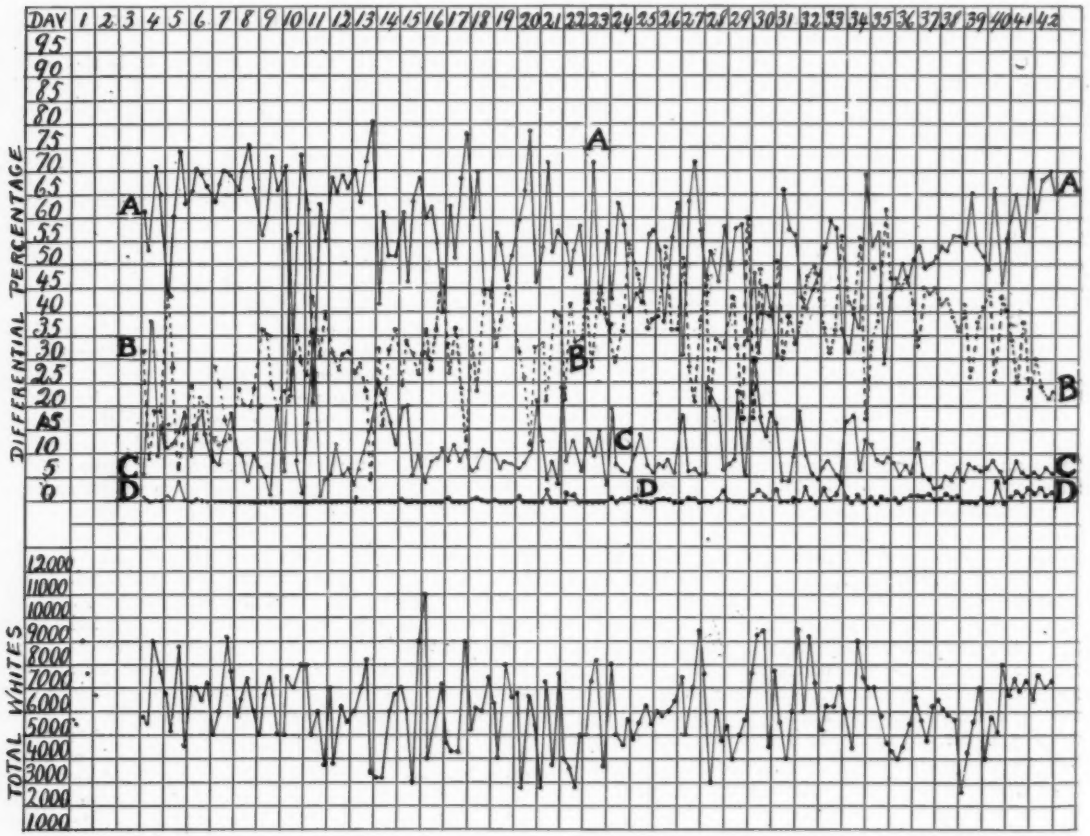

Chart 1.—The leukocytology of ortho-typhoid fevers. Four counts from each day for six weeks, obtained from thirty-six patients in private practice. A indicates polynuclears; B, small mononuclears; C, large mononuclears; D, eosinophils.

30. Longcope, Warfield: Rep. Ayer Clin. Lab., March, 1905.
31. Coleman, Warren, and Hastings, T. W.: Bacillus Coli Communis, Am. Jour. Med. Sc., February, 1909, p. 199.
32. Thayer, W.: Increase in Leukocytes Following Cold Baths in Typhoid Fever, Bull. Johns Hopkins Hosp., April, 1893, No. 4, p. 30.
33. Arneth, J.: Blutuntersuchungen bei Tuberculosis Pulmonum, München. med. Wchnschr., 1905, No. 12, p. 542.
34. Hultgen, J. F.: Mixed Hypercytosis, Its Nature and Significance, Quart. Bull. Northwestern Univ. Med. School, December, 1910, xxi, No. 3, p. 163

Di-normo-hypocytosis (10-15-18th day).
Mononuclear hypocytosis (15-25th day).
Mononuclear normocytosis (20-30th day).
Mononuclear hypercytosis (25-35th day).
Mixed or di-hypercytosis (30th-45th day).
Di-normocytosis (40-50th day).

Charts 2 and 3 are arranged schematically. Chart 1 illustrates the comparative constancy of a typhoidal blood-picture, persisting in spite of the well-timed shifting of its ingredient leukocyte-curves. The blood-picture of typhoid and paratyphoid is typical during the entire course of the disease. Its differential diagnostic value is as great in the fourth week as in the first week. It goes without saying that these total and differential leukocyte-curves represent the movements of the leukopoietic tissues (lymphoid cells, spleen and bone-marrow). As such their great prognostic value becomes self-evident.

A few preliminary remarks on the leukocytology of these kindred affections:

It is, of course, natural to accept the fact that in short duration, abortive or walking typhoid (see Chart 3) or paratyphoid fevers the leukocyte picture shows curves which are much shorter, though otherwise identical with those seen in true typhoid fever. It is also easily conceivable that the cytology of these infections in children would be tinged with the attributes of youth —resiliency, if not exuberance. Hence the shorter course and the greater intensity of blood-life, more lymphocytosis, relative and absolute, a lesser and shorter leukopenia and more marked mixed hypercytosis. Youth, health and the intensity of the existing affections must be considered in the framing of the typhoid-paratyphoid blood-picture. In judging the diagnosis or the prognosis, it is essential to base our opinion on the conjoint clinical and hematologic examinations.

THE INTERPRETATION OF THE TYPHOID-PARATYPHOID BLOOD-PICTURES

After a slight (supposed) initial rise, the total leukocytes drop rapidly and maintain a fairly constant low level until the fifth and sixth week of the disease, when, in juvenile patients or in patients with resilient blood-forming system, they return toward normocytosis, which yield to a more or less transitory mixed leukocytosis and then gradually shifts to a permanent normal level. As to whether these total white-cell changes are due to negative chemiotaxis according to Ehrlich, or due to a typhoid-endotoxin inhibition of the bone-marrow as O. Naegeli believes,[35] cannot as yet be definitely decided on. That the leukocytes are screened in the lung capillaries, as Bruce, Jacob Goldscheider and Andrewes maintain, is a hypothesis to which I cannot adhere. The leukopenia of typhoid affections looks to me like the prolonged ebb of the functional wave of cell immunity, a form of an hematopoiesis characterized by slow production and slow maturation of leukocytes. The polymorphonuclear cells after a probable initial rise diminish at first rapidly in number, then lose gradually but constantly until the end of the fourth week (see Charts 1, 2 and 3), when they return step by step toward the normal percentage. The polynuclear curve crosses the mononuclear wave twice, first on its downward course about the twenty-second or twenty-fourth day, and again on its ascent by the beginning of the seventh week. The small mononuclear leukocytes or lymphocyte curve is the exact counterpart of its predecessor polynuclear.

35. Naegeli, O.: Blutkrankheiten und Blutdiagnostik, 1908, p. 427.

Their movements are always complementary and compensatory. The lymphocytes rise after a slight initial drop, then move at a fairly even subnormal level until the fifteenth or eighteenth day, when they approach and cross their normal line, remain above normal for eight or ten days and then recede gradually into their normal proportions.

The large mononuclears and transitional cells form the most interesting part of the typhoid blood-picture. They are remarkably increased in number up to the end of the sixth week, then they regain their normal percentage. This myelemia, as Pappenheim calls it, was observed by Chetagurow in 1889. The resemblance of their curve to the polynuclear wave is, in my opinion, a very remote one, although Naegeli believes them to

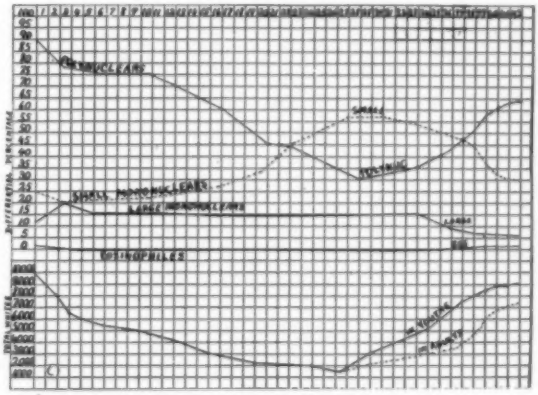

Chart 2.—"Leukocytology of orthotyphoid fever (schematic)."

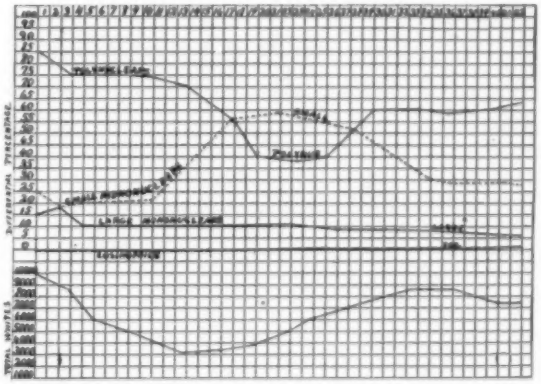

Chart 3.—"Leukocytology of paratyphoid fever (schematic)."

"follow the neutrophils mostly." There is no other prolonged leukopenia known to me in which there is such a continually high proportion of large mononuclears. This phenomenon I believe to be explainable in three ways: by a slow maturation of these cells into polynuclears, by their overproduction from the endothelial cells of the lymphoradicles, or by both conjointly.

The eosinophils undoubtedly play an important rôle in typhoid fever cytology. I fully agree with Naegeli's dictum that "no febrile disease can be of typhoid nature if the eosinophils are present in normal or half-normal proportions." These cells disappear suddenly and totally, and return very cautiously around the beginning of the sixth week.

CONCLUSIONS

1. There exists a typical typhoid and paratyphoid blood-picture throughout the course of these diseases.

2. This blood-picture is characteristic of the obligate parasites of the typhoid-colon group and constitutes, probably, the counterpart to that usually found in colon bacillus infections.

3. The leukocyte reactions of typhoid and paratyphoid infections must be interpreted as group-phenomena.

4. In the pathogenesis of this typhoid-paratyphoid blood-picture, the germs and lymphatic tissues play a joint rôle, but the character of the intoxication determines the blood-picture.

5. The diagnostic value of the leukocyte-picture is particularly great during the first ten days, while its prognostic value is especially marked in the last ten or fifteen days of the disease.

6. Repeated, combined total and differential leukocyte-counts must be made throughout the course of typhoid or paratyphoid fevers. The cytology of these affections can be appreciated in no other way.

7. The immunity with leukopenia of the typhoid-paratyphoid group and the immunity with active leukopoiesis of the colon wing of this family are evidently the two extreme phases of one fundamental process.

8. Blood-charts and reasoning by analogy show that the conception of the typhoid blood-picture as a group phenomenon within the typhoid-colon family is correct.

9. Each member of the typhoid-colon bacillus group is able to produce either a toxic gastro-enteritis or a true typhoid affection.

10. The close or fundamental kinship between the numerous members of the typhoid-colon group of bacilli is proved, first, clinically by the time-honored name of typhoid fevers, second, pathologically by their common faculty of producing ulcers in the gastro-intestinal tract, third, cytologically by their blood-picture, fourth, serologically by the coagglutination of Pfaundler, fifth, epidemiologically by Hazen's theorum of the Mills-Reinke phenomenon of typhoid and general mortality.

11. The law of periodicity of inorganic chemical elements, enounced by D. I. Mendeleeff in 1869, is in my opinion applicable to the distinct group-arrangement of organic, living microorganisms.

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REMEDIES FOR ANIMAL PARASITES

A STUDY OF THE RELATIVE EFFICIENCY AND DANGER OF THYMOL AS COMPARED WITH CERTAIN OTHER REMEDIES PROPOSED FOR HOOKWORM DISEASE *

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Thus far I have experimented with about twenty different remedies for ankylostoma aside from the action of various chemicals on the eggs and larvæ. It is desired to consider more in detail four of these remedies which at present seem to me to be of particular interest in treating hookworm disease, to call attention to some of the dangers accompanying the use of each and to suggest what laboratory experiment and clinical experience have shown to be the best method of expelling hookworm by these particular remedies. What I shall have to say, then, is of the nature of an experimental criticism interpreted in the light of many experiments on dogs, especially, infected and studied under conditions that admitted of proper control.[1]

THYMOL

One of the first substances to be used with any degree of success is thymol, which is one of the higher phenols known as isopropylmetakresol. It is difficultly soluble in water, 1 gm. in 1,100 c.c., but is very easily dissolved in alcohol, and less so in castor oil, olive oil and fats, than in alcohol. When the dry powder is taken after a twelve-hour fast, with the alimentary tract cleaned out by a saline or calomel purge, but little thymol is absorbed, most of it leaving the intestine by way of the feces. After 3 gm. doses daily for a long period of time, Blum was able to recover from human urine sufficient thymol compounds to analyze. These appear in the urine as thymolsulphuric acid, thymolglycuronic acid, thymolhydrochinonsulphuric acid, and a thymol chromogen. During twenty-four hours after taking 3 gm. of thymol one man eliminated thymolglycuronic acid equivalent to 0.2025 gm. dichlorthymolglycuronic acid. When absorbed in sufficient quantities it causes marked depression, nausea, vomiting, severe headache, roaring in the ears, weak heart-beat, resulting in a thready pulse, muscle weakness, lowering of the body temperature, dizziness, and general collapse. In my experiments on dogs, the myocardiograms show the heart muscle largely responsible for most of the graver symptoms, its contractions grow more and more weak, resulting in a gradually lowered blood-pressure, until finally, if the amount of thymol in the blood is sufficient, the animal dies from low blood-pressure, due to diminished ventricular output. Thymol also acts on the mucous membrane, stimulating secretion of mucin and causing burning sensations and sometimes vomiting, in which case the patient may suffer intensely from its irritant action on the membranes of the mouth, nose, and throat. Should the drug be accidentally drawn into the lungs it may cause grave complications, even consolidation of that part of the lung tissue with which it comes in contact. In general, then, it may be said that thymol resembles phenol (carbolic acid) in action, but is less easily absorbed and is about one-fourth as toxic.

Bozzolo, in 1881, had occasion to treat ankylostomiasis, and discovered that thymol was efficient in expelling the parasite. At first he gave 2 to 10 gm. of the powder a day, followed by a weak alcoholic beverage, so as to have a weak solution of the drug in the alimentary tract. Later he gave 2 gm. every two hours until 12 gm. were given. In the hands of later workers this treatment proved effective, but too drastic, and after a number of mishaps smaller doses were recommended, the use of all thymol solvents forbidden, and more emphasis placed on vigorous purgatives to expel the parasites and diminish the possibility of further absorption of the drug after its function as a vermifuge had been fulfilled.

With thymol treatment, as with most treatments for intestinal parasites, too much emphasis cannot be placed on the proper preparation of the alimentary tract and the parasite before administering the antihelminthic. Since thymol combines with proteins and other substances taken as food, and by dilution alone is kept away from the parasites, the alimentary tract should be as empty as possible. To this end only sufficient food is

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

* From the Hygienic Laboratory of the U. S. Public Health and Marine-Hospital Service.

1. The details of the experiments, along with a discussion of the other remedies studied, will appear in a bulletin from the Hygienic Laboratory in the near future.

eaten at noon on the day before taking thymol to insure against faintness. The evening meal ought to consist of beef broth, or some form of gruel. At about 8 or 9 p. m. a compound cathartic pill is taken. The following day the treatment proper begins, the best of which seems to be that so clearly outlined by Stiles,[2] in substance being that recommended by the Porto Rican Commission which has reported thousands of successful treatments. It is as follows:

At 6 o'clock in the morning, one-half of the dose of thymol is taken in flat, 5-grain capsules, the finely powdered thymol being thoroughly mixed with one-half to one-third its bulk of milk-sugar to insure rapid disintegration of the mass in the stomach and intestine. The patient should lie down until some time after the drug has passed into the intestine; at 7:30 or 8 a. m. the second half of the calculated dose is taken and at 10 a. m. a vigorous purge, either of magnesium sulphate or of compound cathartic pill, is taken. The feces from now until the day following ought to be collected, washed and examined for parasites, and a week later a fresh sample examined for eggs to make sure of the efficiency of the method.

The dose of thymol should depend on the age and condition of the patient. Since absorption is much more rapid in young animals than in adults, and their protoplasm reacts more vigorously, the dose must be reduced. The body cells of badly infected individuals are also less able to withstand the toxic action of the drug, the numerous wounds in the intestinal mucosa favoring increased absorption of thymol, just as in the case of abraded surfaces in contact with phenol. Experiments on animals and clinical experience teach that the dose of thymol for both young animals and those weakened by disease must be only one-tenth to one-fifth that of a vigorous adult. The following doses represent the maximum amount of thymol recommended by the Porto Rican Commission and by Stiles to be given during one day for the age groups, respectively, to be given in two doses and modified, not to the age, but to the apparent maturity and vigor of the patient:

Age, Years.	Grains.		Grams.
Under 5	7½		0.5
From 5 to 9	15		1.0
From 10 to 14	30	or	2.0
From 15 to 19	45		3.0
From 20 to 59	60		4.0
Above 60	30–45	2.0 to	3.0

Treatment with submaximal doses of thymol expels only a fraction of the parasites and renders the residue in some way less susceptible to subsequent doses. Though only a part of the parasites are expelled, the patient at once reacts to the improved conditions of nutrition, the hemoglobin content is increased, the heart strengthened, and in general the bodily health is improved. For this reason instead of following within a few days the first treatment with a second, it seems best to wait and take advantage of the host's increased resistance to the drug because of the increased bodily vigor. Then if tolerance is developed by the parasite, use may be made of one of the other vermifuges discussed later.

Although thymol is generally conceded to be one of the most active hookworm expellants, it has certain drawbacks, chief of which are its irritant action, its toxicity when absorbed, and its tendency to cause tolerance in the parasite in excess of that which it develops for the host. These objections have encouraged the trial of other phenol compounds, but with little success, since those that are less soluble are likewise less active vermicides. Beta-naphthol, however, has been tried and with considerable success.

2. Stiles, C. W.: Bull. U. S. P. H .and M.-H. S., 1910, No. 30.

BETA-NAPHTHOL

Beta-naphthol is a naphthalin derivative, soluble at 25° C. in 950 parts of water and 0.61 parts of alcohol, is quite soluble in olive oil, castor oil, fats, and difficultly soluble in the saliva and in the acid gastric juice. Part of the beta-naphthol is absorbed in the intestine; just how much seems never to have been determined, but that which is absorbed is, according to Edlefsen, excreted by the kidneys as beta-naphthol gluconic acid, beta-naphthochinon, and possibly in other slightly modified forms. One of its chief dangers is that the kidney cells are apt to be affected, resulting in nephritis and subsequent albuminuria. The mucous membranes are affected by it, but there is not that intense burning of the mouth, throat, and stomach, following contact with the dry powder, which is experienced with thymol; on the contrary there is more of a numbing sensation of the tongue. Thus far I have found in the literature no cases of severe poisoning from its internal administration. Most of the cases of poisoning recorded are of patients treated for skin disease, this drug being, like phenol, readily absorbed by the skin when applied in ointments.

Colbert, after trying thymol in a few hundred cases of ankylostomiasis with a number of unpleasant results, employed beta-naphthol. Out of 5,000 patients, 4,056 were cured. A large number, however, had to be treated four or five times before the feces no longer contained eggs. Beta-naphthol is a weaker vermicide than thymol, consequently slower to effect a cure. In spite of this, Colbert recommends it above thymol because of the absence of the more objectionable properties of the latter. Fort, of Georgia, reports 374 successful treatments and recommends it highly.

The experiments in this laboratory confirm the reports of clinicians. Dogs stand beta-naphthol much better than they do thymol. It does not cause vomiting except with large doses and in prolonged treatment. It does, however, frequently produce considerable irritation of the genitalia after urinating, but thus far none of the animals developed either immediate or remote symptoms of a grave character. Since the parasites likewise react less vigorously toward this drug, and in equal doses beta-naphthol seems to be less active than thymol, probably the difference in activity is in proportion to their relative toxicity for the host. If further experiments prove this to be true there is no advantage in substituting beta-naphthol for thymol; less thymol should be used at a time and the number of treatments increased. But should the ratio of relative efficiency and that of the relative toxicity of these two compounds be in favor of beta-naphthol, then it is the more desirable and safer remedy in cases of children, anemic, and aged patients. This point I hope to prove in the near future.

In general the procedure of treatment and the precautions to be taken are the same as those described for thymol. For a vigorous adult the procedure is as follows:

The patient is placed on a liquid diet; at 3 p. m. a mild cathartic of calomel or salts is given. On the second day at 7 a. m. 1 to 2 gm. of beta-naphthol, mixed with about one-third its weight of milk-sugar, is given in a gelatin capsule; at 8 a. m. 1 to 2 gm. more are given; at 11 a. m. a vigorous cathartic of salts or compound cathartic pill; at 12 a glass of milk and bread may be eaten, and after that the regular diet (Clayton, Fort).

MALE FERN

In Europe there is perhaps no vermicide so widely used as the ether extract of male fern. In the more northern portions of Europe it seems relatively easy to

obtain very active samples of the rhizome, but in this country a high quality of it is difficult to purchase on the open market. To insure an active extract the best quality of rhizome, showing the characteristic green fracture, is necessary.

Its active principles readily deteriorate with age, not only when isolated as such, but also as the crude extract and even as the dried rhizome itself. The extract is a mixture of substances, amongst which the most important are filicic acid (Lach), aspidin, albuspidin (Boehm), aspidinol (Boehm), flavaspidinic acid (Boehm), aspidinin (Boehm). Poulsson, Boehm, and Straub think that aspidin, albaspidin, and aspidinin are powerful smooth-muscle poisons, and Straub has later shown that male fern is primarily a plasma poison, attacking both smooth and striated muscle without destroying nervous conduction. These properties make it, theoretically, a powerful and effective poison for ankylostoma, and if the amount absorbed by the host can be controlled it has most of the essentials of a good vermifuge.

With due precautions against solvents and against too long contact with the mucosa of the alimentary tract, the factor of absorption can in part be controlled, but even then there is usually enough of the drug absorbed to enable one to detect it in the tissues of various organs, and filicic acid along with some of its split products appears in the urine. With moderate doses mild poisoning is very common, and large doses are attended with considerable danger. When poisoning occurs the patient experiences severe abdominal cramps, catarrhal and diarrheal conditions of the intestine, headache, dizziness, shortness of breath, yellow vision, and sometimes amblyopia and even temporary blindness. In the severest cases the person becomes delirious, is attacked with severe muscle-cramps which may develop into tonic spasms, and even death may ensue. In the severe cases in which recovery takes place, permanent unilateral or bilateral blindness results. Sidler-Huguenin, 1898, compiled seventy-eight cases of poisoning and twelve deaths; Nieden compiled forty-seven cases of injury to sight from male fern; nineteen cases showed double-sided, and fifteen one-sided amblyopia. According to Kalayama and Okamoto, in 32.5 per cent. of the cases of male fern poisoning there were varying degrees of visual derangement. Like thymol, then, this remedy is not absolutely safe, for only 5 gm. has caused severe poisoning in man. Various attempts have been made to eliminate the poison that is injurious to the host, retaining the substance that has a selective action for the parasite, but thus far these so-called active principles have been found unreliable.

Male fern extract had long been known as a teniacide, but Perona and Perroncito about 1881 brought it into prominence as a substance highly toxic for ankylostoma. Since then its efficiency as a vermicide has been amply demonstrated.

Fickerman treated 534 patients, the first dose curing 83.9 per cent. Laplanche found that the first dose cured 75.9 per cent. of 1,648 patients. Nagel compiled the results of about 4,000 cases, his observations extending over several years of time; mild poisoning was common. Tenholt treated about 10,202 worm patients, 74 per cent. requiring but one dose. Birgmann treated 22,000 patients with ankylostomiasis and observed only four cases of permanent blindness.

In treating hookworm disease by male fern it is not only essential to have a fresh ether extract, but it is necessary to prepare the alimentary tract for its reception. The mucosa should be free from mucin and from fatty foods. All solvents of male fern such as alcohol, fats, and oils, must be avoided, just as with thymol. Then in order to avoid unnecessary absorption after the drug has fulfilled its function of poisoning the parasite, it should be expelled as quickly as possible. Compound cathartic pills or magnesium sulphate seem to be the best cathartics. Since ether extract of male fern has a very disagreeable taste, it ought to be put up in capsules. Glutinoid capsules have been recommended, but when taken in these, larger doses seem to be necessary. The following procedure used in part by Goldman seems to be a good one:

For a vigorous adult 8 to 16 gm. of ether extract of male-fern is put up in 1 gm. gelatin capsules. First day: Evening meal of meat broth or light soup; compound cathartic pill later, say about 8 p. m. Second day: 7 a. m. 1 gm. malefern every ten minutes until 4 to 8 gm. have been taken. One-half hour is then allowed to elapse and if no undesirable symptoms develop the remaining 4 to 8 gm. are taken, 1 gm. every five minutes. One to two hours later a vigorous purge is taken (calomel or salts). The feces should be washed and the worms counted; three to ten days later the feces are again examined for eggs, and if necessary the treatment repeated.

EUCALYPTUS AND CHLOROFORM

Another mixture known as "Hermann's Mixture" is of considerable interest. It is composed of 3 gm. of chloroform, 2 gm. of oil of eucalyptus, and 40 gm. of castor oil. This is divided into two doses and given at hour intervals.

Thus far I have been unable to find any cases of acute poisoning from pure oil of eucalyptus mixed with castor oil. It is known to have a local action on the skin, but otherwise little is known of its pharmacologic action. Two and one-half c.c. of oil of eucalyptus globulus in 10 c.c. of castor oil, given in a gelatin capsule to a 5 or 6 kilo. dog, causes vomiting. Judging from the contents of the vomit, the mixture caused an abundant flow of mucin, slightly tinged with blood. The same animal can take, apparently with little inconvenience, the same amount of eucalyptus oil if given at hourly intervals in doses of 1 c.c. mixed with 5 c.c. of castor oil.

It cannot, however, be said of chloroform that it is a harmless drug when taken in doses as usually recommended for expelling intestinal worms. As is well known, chloroform alone is a powerful irritant to all parts of the alimentary tract. It acts locally on the mucosa, causing lesions therein, and stimulates both the stomach and the intestine to very active movements. Being absorbed from all parts of the alimentary canal, especially the upper portion, it reaches the liver by a rather direct route and may result in acute poisoning. A 10 kilo. dog may show no outward signs of intoxication after ingesting 3 c.c. of chloroform thoroughly mixed with 10 c.c. of castor oil. Hookworms may be expelled within two and a half hours after giving the mixture. If, however, a second dose be taken three to four hours afterward, a dog, before lively and playful, soon ceases to be so, food is refused, vomiting may set in, and some hours later the animal is seized with acute mania-like symptoms and eventually dies. The post-mortem findings of such animals reveal profuse lesions in the liver, the lobules, and in many places groups of them, being distinctly outlined by their yellow color, the pericardium shows a peculiar mottled appearance, and there is hemorrhage in the lungs, diaphragm, stomach and intestines.

There can be no doubt about the chloroform being responsible for these pathologic conditions, and such

results place one on his guard in using chloroform internally. Its invidious action on the internal organs may not result in symptoms gross enough to be observed until considerable time has elapsed, thus tempting one to administer a second dose, the summated action of which may bring things to a crisis at once. Acute mania is reported in the case of a boy after taking for hookworms the prescribed dose of "Hermann's Mixture." The dose was probably that supposed to be taken by an adult, and should have been modified according to the age and condition of the patient, a matter to be considered at all times. Even then patients seem to rebel against a second treatment, and Colbert, Key, and Law each speak of it as dangerous and less efficient than beta-naphthol. Thus far I have found the remedy more efficient for dogs than beta-naphthol, and an excellent substitute for thymol in very refractory cases.

It is not quite clear just what part oil of eucalyptus plays in expelling ankylostoma, but until further data are at hand I am inclined to think it is simply an irritant to the parasites, causing in them rapid vermiform movements, and making them loosen their hold and change their position, in which case a vigorous purge may sweep them alive out of the intestine. The chloroform not only does this, but also anesthetizes them sufficiently to render them incapable of again taking hold of the mucosa while being expelled by the purgative action of the ricinolic acid. When quickly expelled in this way the worms are not at first very active, but placed in saline solution they soon become very active and may live twenty-four hours.

That chloroform is the most important constituent of this formula can easily be demonstrated by taking two infected dogs A and B. A is treated with 15 c.c. of castor oil plus 3 c.c. of eucalyptus globulus, in 3 doses an hour apart. After a second treatment only thirteen live worms were obtained. B is treated with 15 c.c. of castor oil and 3 c.c. of chloroform in doses one hour apart. Inside of 3½ hours after the last dose, feces were obtained containing 133 hookworms, and a few hours later 150 more were expelled, all of which were very active after being in water ten minutes. A second treatment some days later secured twenty-five hookworms; subsequent examination of the feces showed it free from eggs, and later after using the animal for a blood-pressure experiment, careful examination of the stomach and intestines showed the animal to be free from hookworm. Dog A was then treated with 15 c.c. of castor oil and 3 c.c. of chloroform, in three doses an hour apart; hookworms were obtained, and after the second treatment the feces showed no hookworm eggs.

These experiments seem to represent in general the relative action of eucalyptus and of chloroform. With some dogs a larger number of worms may be obtained after eucalyptus, but in such cases there is considerable blood in the feces, whereas chloroform is quite uniform in its action and always expels the worms more efficiently. So that one is justified in concluding that the oil of eucalyptus globulus is probably superfluous and at best simply an aid to the chloroform during the stage of irritation in causing the worms to loosen their hold on the mucosa.

CONCLUSIONS

1. Any practical vermifuge to be effective in expelling uncinaria or ankylostoma must be an irritant of sufficient intensity to cause the parasite to loosen its hold.

2. It should paralyze the neuromuscular apparatus to hinder the parasite from making fresh attachment.

3. Its relative toxicity for the parasite must be either much greater than that for the host or be much more readily absorbed by the former than by the latter.

As has already been pointed out, each of the above remedies is absorbed more or less from the alimentary tract, and Tenholt has even gone so far as to assume that only such drugs as are absorbed can be active in expelling ankylostoma. Since their method of taking food is by way of the mouth they must of necessity be poisoned by ingesting the tissues of the host already impregnated with the toxic substance, and if the host does not absorb sufficient thymol, beta-naphthol, male fern, etc., they remain fixed to the intestinal mucosa and are not expelled by the purgative.

My present experimental data suggest that this is at best only a part of the truth. It happens that drugs like thymol when combined with iodin or the benzole radicle are much less active vermicides than thymol itself. It is also true that thymol iodid, being much less soluble than thymol, is absorbed to a less extent by the intestinal mucosa. *A priori* this would seem to support the idea of Tenholt that thymol iodid has no action on hookworms because none of the drug is absorbed by the host. But if the worms themselves be studied in contact with solutions each of thymol and thymol iodid it is possible to explain the reaction of the worms towards the two drugs on the basis of amount of drug in actual contact with the parasite and the effect of introducing the iodin atom into the molecule, and thus lowering its toxicity. While, therefore, the drug absorbed by the host and ingested by the parasite as a part of the cell and plasma may have a toxic action on the worms, it seems that such drugs as thymol, male fern, chloroform, and beta-naphthol, act[1] by direct contact with the worms, causing rapid vermiform movements, and if the irritation is sufficiently great the worms finally attempt to escape. From now on until paralysis sets in not a little of the surrounding media is ingested, since the mouth parts of the parasite are kept in constant action. At this stage the intestinal contents of the host ought to be expelled so as to get rid of the surplus drug and the poisoned or anesthetized worms. Judging from the action on the worms *in vitro*, two to three hours seem to be about the time when the cathartic should begin its work. Although in the case of chloroform and eucalyptus the cathartic in the form of castor oil works hand in hand with the chloroform.

In conclusion it may be said that at present thymol is one of the most toxic vermicides for ankylostoma thus far proposed. It is easy to obtain, keeps well, is cheap, and is easily administered; it kills the parasites instead of merely paralyzing them. When taken under the care of a physician who is careful to gauge the dose in accordance with the physical condition of the host, it seems to be the best all-around remedy thus far studied. While dangerous in large doses, it differs from beta-naphthol, male fern, and chloroform, in that the danger is at once apparent and can be controlled by heart stimulants and by methods that help maintain a good blood-pressure until the drug has killed the parasite and the cathartic has removed the excess of thymol. Whereas, with the other remedies just mentioned the danger signals are less obvious and usually it is only after irreparable damage is done that one is aware that his patient is in danger of any after-effects.

Beta-naphthol is probably the next pure chemical substance that ought to be tried more extensively on human hookworm subjects. Persons affected with kidney lesions ought not to take it, and when used the urine

should be examined to determine whether it causes albuminuria. If the maximum dosage of 2 to 4 gm., divided in two parts and given an hour apart, does not cause renal disturbances in adults, beta-naphthol has much to recommend it as a hookworm remedy.

Male fern at present has not much promise in this country because of the lack of care in collecting the rhizome and in preparing an active ethereal extract. This, however, is a condition which doubtless would soon be remedied if once considerable demand existed for an active extract.

At present there is but little reliable data on how efficient "Hermann's Mixture" is for expelling human hookworms, or what percentage of cases might show after-effects. It seems unnecessary to add such an irritating oil as eucalyptus globulus, and if chloroform is used it ought to be given with plenty of oil. It is best to divide the maximum 3 c.c. dose, for a vigorous adult, into 3 parts, 1 c.c. of chloroform to 10 c.c. of castor oil, given at hour intervals. Should vomiting occur before the chloroform is taken, stop the treatment, and if necessary change to thymol or beta-naphthol. By thus regulating the dose of chloroform, I have had excellent results with dogs, it has proven rapid in its action and thus far not followed by any evil after-effects. Should the chloroform-castor oil mixture act as favorably in human beings as it has for me in dogs, it will prove a universal worm remedy of great importance.

Finally it may be said that the best of remedies are but weak instruments of defense in stamping out this degrading disease. The weapon of offense must after all be proper disposal of fecal matter so that infection is rendered impossible. And what can be more effective in accomplishing this than the cultivation of a healthy public sentiment which will insist on its communal rights in this matter, protect the innocent, and by proper police regulation quickly punish the offender? To this end it would seem that the most effective line of attack is that led by Stiles and others who are endeavoring to educate the masses as to the importance of proper sanitation.

MY EXPERIENCE WITH HOOKWORM INFECTION IN THE DEEP GOLD MINES OF CALIFORNIA *

E. E. ENDICOTT, M.D.
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JACKSON, CAL.

The physician practicing medicine in the interior of the North American continent may have meager opportunity for the application of tropical medicine or meet few diseases foreign to the locality, but as new diseases, new industries, and a changing population take effect, then he may anticipate new enemies on which to test his skill.

I offer this paper without any anticipation of presenting anything new, but with the hope that my experience with uncinariasis, or hookworm infection, together with the few suggestions that I can make, in relation to its cure and particularly its prevention, may prove of value to the fraternity. I think that I can positively state, without fear of contradiction, that many individuals have gone down to an untimely end from hookworm infection, and we have helped to bury our mistakes by signing a death certificate for "miners' consumption" or some other disease, diagnosed symptomatically; while in many other cases, hookworm has been a contributing cause of death and has gone unrecognized, unheralded and unappreciated.

I may be radical when I say that I doubt if there are any deep mines in the United States, which have been in continual operation for a number of years, and which employ foreign laborers—miners who have worked in the mines of Cornwall, Austria, Italy or South Africa; and perhaps many other places before coming to this country—that are not more or less infected. In the mines along what is called the "mother lode," the deep gold-mining district of California, laborers of this class are employed.

These foreigners, without exception, come to the Pacific Coast from eastern ports, mostly from New York. They frequently stop *en route* at eastern mines, in Pennsylvania, Michigan and other places, and there is no reason to believe that they do not infect these mines.

These miners become infected by working from childhood in infected mines in the old country, and all are carriers, in the same sense as the typhoid carriers that we occasionally see. It is not only my opinion, but also that of Dr. Gunn, of San Francisco, whom I consider an authority on hookworm, that most mines in operation for a considerable length of time, employing this class of labor, where the conditions are favorable to their development, are infected with hookworm.

It might be well to quote at this time from Frohlich, Raillet, Stiles and others, that there are two distinct species of hookworm, the European and American, but I wish to say that if the European are not American, they should be, for they have been in this country long enough to be naturalized. These authorities state that the effects of the two species are not distinguishable and the treatment is the same.

Hookworm infection, if suspected, is not difficult to diagnose, but by the neophyte it may be overlooked. One may stand on the streets of any mining town along the "mother lode," when the miners come from and go to work, and with little chance of mistake point out the men infected with hookworm. Their skin has an appearance as peculiar to their trouble and as characteristic as is the cachexia of cancer.

When a patient complains of symptoms referable to gastro-enteritis, appendicitis, functional heart trouble, etc., the stools should be examined for the ova of hookworm. After an ordinary laxative the worms themselves are not found in the stool, only the eggs. Having once seen the ova, which are clearly pictured by recent books on the subject, there is little chance for mistake. Many cases of apparent heart trouble, gastro-enteritis, appendicitis, anemia, malaria, etc., yield like magic to hookworm treatment. I recall one case in which a miner, supposed to be dying of "miners' consumption," who was too weak to cross the street, was found to be infected with hookworm and responded nicely to the treatment; he is now back at work in the mine, doing hard manual labor, and is well and hearty.

It is not necessary to give a laxative to secure a sample of the stool. The patient can pick up a small amount of an ordinary stool on a toothpick and place it in a clean vial. A thin film of this spread on a slide, and examined under a ⅛ inch objective, without cover glass, will disclose the ova if they are present.

Eosinophilia is diagnostic evidence of hookworm infection; however, we must keep in mind the fact that eosin-

* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

ophilia is found in many other conditions which may simulate hookworm, viz., bronchial asthma, emphysema, phthisis with cavities, diseases of the nervous system, chlorosis, some diseases of the skin, and lithemia. The absolute diagnosis of uncinariasis consists in finding the ova under the microscope and later the worms after having administered the proper medicament.

Treatment is simple and effective; the usual prescription consists of thymol in 5-grain doses every two hours until four doses are taken, to be preceded and followed by a saline laxative, a light supper, and no breakfast, before taking thymol; fats and alcoholic drinks are interdicted.

The other treatment most in use is the following:

℞	Gm. or c.c.		
Spiritus chloroformi	2|50		m xl
Olei eucalypti	1|25	or	m xx
Olei ricini q.s.	60|		ʒii

Sig.: Take one-half and repeat in one hour.

This latter treatment has an advantage in that it does not require the same precautions in diet and beverage, but I do not believe it to be so effective; besides it has its untoward effects, fainting, nausea. Some patients take the mixture with pleasure, while others become cyanosed and have to be placed in a recumbent position and given heart stimulants, due no doubt to the weakened condition and the effects of the chloroform.

Either method of treatment must be repeated at intervals of from three days to a week until all ova disappear from the feces. Any method of treatment should be followed by a good tonic, usually some iron preparation.

Now comes the most important part, that of prophylaxis: Having once cured the patient, how can we prevent reinfection? One can readily appreciate the folly of returning the cured person again to the same opportunity for reinfection without giving instruction and building barriers against such reinfection. Beyond question, the soil of these mines is infected. This fact has been absolutely proved by Dr. Gunn. The ova and larvæ may be seen in specimens of soil taken from the mines, and the mode of human infection is by skin contact with infected soil. Here I wish to say that the ground-itch, so common in the southern states and indicative of hookworm infection, is noticeable by its absence in the deep mines, although we do see an exceptional case.

The natural question that would arise in the mind of the novice, or those not acquainted with the extent of deep mines would be: Why not disinfect these mines? When it is remembered that one mine alone, near Jackson, is 3,600 feet deep (the deepest perpendicular shaft of any gold mine in the world), that its drifts, stopes, crosscuts, and raises cover acres, one can readily see the futility of such an attempt without a great disruption of the social and economic conditions of the locality. The question resolves itself into one of guarding the employees against reinfection and permitting the ova and larvæ in the infected soil to die a natural death.

In accord with this belief I would advise the placing of portable commodes at convenient places in the mines, these commodes to contain an antiseptic, and to be emptied at frequent intervals, and the miners to be instructed to use them exclusively instead of the sumps or drifts, as has been the habit, suspension or discharge from work to be the penalty for violation of this law. The custom of miners bathing only to the waist-line on returning from work must be abolished. A pool or cement tank should be provided and all underground employees be made to take a complete bath. I would also have provided at the changing-room at the mines as many disinfecting rooms as there are shifts, and that the miners be instructed to place their working clothes therein after returning from work, these clothes to be subjected to a thorough disinfecting by means of sulphur, formaldehyd or other disinfectants. All these mines are infested with hordes of rats, that are protected as scavengers, and it has occurred to me that the rodents may be a means of spreading the infection from one level to another. In line with this thought, I have secured rats from all the neighboring mines and have made careful examinations, but so far the results have been negative. At this time, however, I would not care to say that there is not a possibility that they might be carriers under certain circumstances; further investigation will be required.

In conclusion, I must say that to accomplish good results along the line of stamping out hookworm infection in the deep mines, regulations must be passed by state boards of health, empowering county and city health officers to see that the proper regulations are observed in the full sense of the word, otherwise Rockefeller's millions and our good efforts will be wasted on the desert air, and the hookworm will be left as a heritage and burden for those who follow.

HOOKWORM DISEASE IN CALIFORNIA, ITS IMPORTATION, DISSEMINATION AND PREVENTION *

HERBERT GUNN, M.D.
SAN FRANCISCO

Up to six years ago hookworm disease was unheard of in this state except for a few isolated imported cases. In 1905 I called attention to the fact that a large number of Porto Ricans were taking up residence in California and that over 50 per cent. of them were hookworm carriers.[1] During the following four or five years attention was frequently drawn to the subject, but no measures were instituted to control the importation of the disease until 1910, when Passed Assistant Surgeon Glover of the U. S. Public Health and Marine-Hospital Service, stationed at the Immigration Station at Angel Island, San Francisco, began the examination of immigrants for hookworm disease.

On account of the very efficient manner in which this work is being continued, it is safe to say that practically no hookworm carriers, coming under the jurisdiction of the immigration department, are now permitted to enter this port. So far as is known this is the only immigration station where such measures are taken, so that Chinese, Japanese, Hindus, Central Americans, etc., may readily enter United States territory without a question as to their being hookworm carriers.

In the latter part of 1910, under the auspices of the California State Board of Health, I investigated the conditions existing in certain gold mines in this state,[2] and found that the disease was endemic and the infection extensive, being as high as 75 per cent. in some of the mines.

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* Read in the Section on Pharmacology and Therapeutics of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. California State Jour. Med., April and August, 1905.
2. Gunn, H.: Hookworm Disease in Mines of California, THE JOURNAL A. M. A., Jan. 28, 1911, p. 259.

During the last year or two several cases of hookworm disease, which unquestionably originated in the Hawaiian Islands, have been observed in San Francisco, which fact is not surprising as the plantations there must have been badly infected before now by the thousands of Porto Ricans who have been employed there for years, and by the Chinese and Japanese. Most of the Hawaiian plantation laborers, after a longer or shorter sojourn in the islands, come to the United States by way of San Francisco, where many remain temporarily, to go into the country districts throughout the state when labor is required, or to the fisheries in Alaska during the fishing season. At the present time there are thousands of these people in this state, or temporarily in the Alaska fisheries who will return in the fall of the year. In San Francisco there is a big colony of them always, but especially in the winter months when there is no employment in the country districts and when the Alaska fishermen have rejoined their families.

With the assistance of the Associated Charities of San Francisco, the San Francisco Board of Health, through a recently established Bureau of Tropical Medicine, of which I have charge, has been investigating the subject of the importation of hookworm disease and, in so far as the infection from the Hawaiian Islands is concerned, has reached definite conclusions. Of a total of 355 examinations of individuals coming to California from various tropical regions, 171 coming from Hawaii were examined especially with regard to hookworm infection, with the following result:

Natives of Spain, total examined	135	
Blood examination for eosinophilia	135	
Eosin count 5 per cent. and higher	68	or 50 per cent. plus
Stool examinations	60	
Ova of hookworm present	9	
Percentage infected with hookworm	15	

Twenty-six of the sixty, or over 40 per cent., were found to harbor parasites of some sort, among which may be mentioned *Ascaris lumbricoides, Oxyuris vermicularis, Trichocephalus dispar, Tænia nana,* and *Balantidium coli.*

Porto Ricans examined	36	
Blood examination for eosin	13	
Eosin count 5 per cent. and higher	11	or 84 per cent. plus

These men were en route to Alaska and no stools could be obtained.

In the following no blood examinations have yet been made:

Porto Ricans, stool examinations	23	
Hookworm ova present	13	
Percentage infected with hookworm	56	plus

Seventeen of the twenty-three, or over 73 per cent., showed parasites of some sort, among which were *Ascaris lumbricoides, Oxyuris vermicularis, Trichocephalus dispar,* one case of *Schistosomum mansonii* or lateral spined bilharzia, *Strongyloides intestinalis* and *Balantidium coli.*

In these examinations specimens were obtained from entire families, and in no case was special selection made on account of apparent sickness, so that the percentage of infection may be taken as a fair average. Many of those examined showed marked evidence of the disease, some being quite incapacitated for work and depending on the Associated Charities for their food-supplies. Many of the children were undeveloped, some in height and weight being 30 to 40 per cent. below the standard for their ages.

It is apparent that these unfortunate people, in addition to being a menace to the rural districts in which they reside, must be a source of considerable expense to the counties on account of sickness and its resultant poverty.

The results of the investigations at this time among the Porto Ricans correspond very closely with those I obtained six years ago when an examination of over 100 Porto Ricans in San Francisco showed an infection of more than 50 per cent.

At the present time the San Francisco Board of Health is investigating the subject in regard to other nationalities, but though cases have been encountered, a sufficient number of examinations on which to base conclusions has not yet been made.

Prevention of hookworm disease in California is a task of considerable magnitude, and can be accomplished only by the State Board of Health with the cooperation of the federal health authorities. On account of our geographic situation and our intimate intercourse with many tropical countries, it will be necessary to have permanently the facilities necessary to combat the disease.

It will be necessary in the first place to prevent, so far as possible, the further importation of the disease, and in the second place to eradicate the disease now existing in the state.

To prevent further cases entering will necessitate the examination of certain classes known to be more or less infected (e. g., the laborers arriving at present from the Hawaiian Islands and a large proportion of the laborers now in the Alaska fisheries when they return), and the compulsory treatment of all found infected. There should be compulsory treatment of such persons as are found infected at the immigration station, who for legal reasons cannot be detained there for treatment.

It would probably be necessary to have hospital facilities such as the federal government maintains at the Immigration Station on Angel Island, where work somewhat similar to that outlined above is carried out.

In dealing with the disease as already existing in this state, the work of greatest importance would be in the mines, and here the requirements are very clearly indicated:

1. An examination should be made of every mine in the state in order to determine the extent of the infection.

2. Mine officials should be educated as to the importance of hookworm disease and mine sanitation.

3. Regulations should be promulgated and enforced regarding the examination of employees, the treatment of infected persons and mine sanitation.

The necessity of state regulation is clearly demonstrated by the fact that practically no attention has been given the subject by mine officials since the investigations of the State Board of Health eight months ago brought it to their notice.

In only one mine has any attempt been made systematically to examine the men and treat those found infected, and here only twenty-nine have been examined, showing over 75 per cent. positive.

It is quite impossible for the manager of one mine to carry out preventive measures, no matter how anxious he may be to do so, when adjoining mines are doing nothing, because the miners, many of them very ignorant, become suspicious and avoid the mine in which the requirements are so strict and unusual.

The management of individuals outside of mines and scattered about the state presents many difficulties, but

the situation can best be controlled by proper sanitary measures. In some parts of the state, however, there are aggregations of certain people known to be more or less heavily infected, e. g., Hindus, Chinese, Japanese, Mexicans, etc., and these should be especially considered.

To summarize:

1. Hookworm disease has been extensively imported into California in the past.
2. It is still being largely imported at the present time.
3. The deep gold-mines of the state are as badly infected as many of the European mines.
4. In all probability some of the rural districts, if examined, could be demonstrated to be infected.
5. The only preventive measures employed are being taken by the federal authorities, and these are totally inadequate, as they are in operation in only one immigration station, and further, do not cover a large class of people who bring in the infection.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. SCHULTZ, ENDICOTT AND GUNN

DR. THEODORE G. DAVIS, Los Angeles, Cal.: I should like to ask Dr. Gunn whether he makes counts of the red blood-cells? The reason I ask the question is that very recently a cattleman, who has lived out of doors all his life overseeing a cattle ranch in San Obispo County, California, came to me for treatment. He had weighed 180 pounds; when he came to me he weighed 120. He had gradually become so debilitated that he was not able to pursue his work, which was to oversee his ranch. I found that he had hookworm and while I made no count of the red blood-cells there was a marked degeneration of the stroma of the cells and the hemoglobin gradually dropped after I first saw him from 80 per cent. down to 65 per cent. But the point that I wish to bring out is a practical point in the estimation or rather the recovery of the hematoidin from the urine of these patients, and also the effect on the liver of this disease, and recovery of the bile acids from the urine. It is, so far as I know, original. I have been working on it for more than three years. This may be applied to cancer and other diseases that produce substances causing degeneration of the red cell. Three ounces of the urine are acidified with hydrochloric acid and heated slowly over a low flame until bubbles begin to rise, or practically to the boiling point. It is then set aside to cool and is covered with ether.

It should not be shaken, but twisted upside down a few times. The hematoidin will be recovered from the urine in the form of hematin and the bile acids. By removing the ether carefully with a pipette, on a porcelain dish the hematin will be deposited on the upper portion and the bile acids will be on the bottom of the dish, very plain and yellow. If a dilute solution of sodium hydroxid is added to the bile acids and a little water the biliary compounds are washed out and the hematin left on the dish. If one wishes to test the substance further for bile I would suggest to try Torquay's test. Torquay's test consists of 1 part of methyl violet in 1,000 of water. If one takes two test-tubes equally filled with Torquay's test and drops in one tube a few drops of the solution of the bile acids or salt it will cause a disappearance of the blue tint of the methyl violet solution, only the red remaining. I have used this method for over three years in the various disease conditions causing destruction of hemoglobin or the red cells—in leukemia, both lymphatic and splenic, cancer of rectum and stomach, in hookworm disease and the various cardiac and intestinal diseases affecting the liver. In cases of babesia from Yuma, Arizona and Mexico, as well as estivo-malarial fever and other infections, I have found this test very suggestive as well as confirmatory.

DR. JOHN W. COLBERT, Albuquerque, N. M.: It has been my privilege to make an extensive investigation of hookworm conditions in Arizona, New Mexico, Mexico and Porto Rico during the past eight years. In the past eight years I have treated over 10,000 patients, having administered more than 50,000 treatments, and my conclusion is this: Thymol is the most powerful antihelminthic, and is the best remedy in the treatment of hospital cases. Its depressant effect is too great, however, to permit the drug to be entrusted in the hands of clinic or home patients. For these patients beta-naphtol should be given. True, it is not so powerful as the thymol, but its depressant effect is not nearly so marked. There is practically no danger in using the beta-naphtol. About seven years ago I tried the eucalyptus oil and castor oil, as suggested by Dr. Phillips, on ten hospital patients, and all suffered marked dizziness, considerable gastric irritation, and in a few cases considerable collapse, and all refused the second dose. I was therefore unable to follow up the treatment. Of the ten patients there was an average of 424 worms passed from the one dose. With beta-naphtol and thymol my average in 5,000 patients in Porto Rico was a little over 1,000 expelled from one dose.

Dr. Gunn only touched on a very important source of importation here in California, and also in Arizona and New Mexico. I refer to the Mexicans working along our railroads—our track laborers. Last August I presented this subject before the Pacific Coast Railway Surgeons' Association in San Francisco. At that time I reported eighteen cases which had come under my observation in two years' time. Within the past year I have seen almost fifty cases among these track laborers, showing that the condition is on the increase. I am fortunately situated in being near the distribution point for these Mexicans, and have examined many of them before they were sent into Arizona and California, and I do not believe that I overestimate conditions in stating that between 15 and 20 per cent. of these men harbor the hookworm. These investigations were made before the Mexican revolution—the recent insurrection—and we must remember that during this insurrection many of these same laborers for many months had been living in open, insanitary camps and going barefooted, and to-day I believe that this percentage is considerably increased. A few days ago I saw a news item, under date of June 18, stating that railway communication had been resumed between El Paso, Texas, and Chihuahua, Mex., and that the first train entering El Paso had on board 1,100 Mexican laborers for contract work in California and Arizona, all of them coming from points south of the city of Chihuahua. From personal investigations I have found that twelve of the states south of Chihuahua have hookworm disease. I am sure that you will find this condition spreading very rapidly. I want to call your attention to the fact that the warm, rainy season is the time *par excellence* for the hatching of the uncinaria ovum.

I have brought this condition to the attention of the officials of the Santa Fe Railroad, and they have already introduced proper sanitary measures to prevent a spread of the infection. We promptly deport the patients as soon as the cases are diagnosed. Within the past two weeks bulletins have been sent to all officials of the track department giving instructions as to adequate sanitation among the men, compelling the digging of trench latrines along the line of work for the men to use during the hours of work. I think this is a matter to be brought to the attention of the officials of other railroads. I wish to state furthermore that I have brought this to the attention of the Public Health and Marine-Hospital Service and this service has instructed all of their surgeons stationed along the Mexican border to be on the lookout for this disease, and they will cheerfully and readily aid any physician in deporting any one found with the disease.

DR. HARRY R. OLLIVER, San Francisco: It is interesting to know that hookworm is an ancient disease, quite accurate description of it being given in the Ebers Papyrus. In modern times it first occurred in Italy in the workers on the St. Gothard tunnel; then traveled down the Rhine to the mines of Westphalia; thence to Cornwall; then to America, etc. It is an interesting question as to the origin of the New World or American variety, whether indigenous to the United States or brought here by Africans. That the latter is probably true is emphasized by the finding of this variety in the interior of Africa. It is also traceable through the West Indies, Panama and the Philippine Islands. As pointed out by Dr. Gunn,

laborers returning from the Hawaiian Islands are almost sure to bring it here, and the conditions here are most suitable for its propagation. It is especially true of the middle and southern parts of the state, where the irrigation projects are becoming so extensive and the soil, moisture and temperature are ideal for the propagation of the parasite. These laborers naturally take to agricultural pursuits, which predominate in these districts. This, in connection with already infected mines, gives rise to a decided danger of the infection of a large part of California. I believe that basing estimates on 50 per cent. of Porto Ricans being infected, we have in California, over 20,000 cases of hookworm disease.

DR. REID HUNT, Washington, D. C.: Do you get any encouraging results in disinfecting the excreta? I have done no work myself, but Dr. Stiles seems to have about given up in despair the possibility of finding anything that will destroy ova in excreta. Solutions of phenol (carbolic acid) for weeks had little effect. He found that if feces were collected in a septic tank most of the ova disappeared in two or three months.

DR. E. E. ENDICOTT, Jackson, Cal.: It has never been my experience to see a live worm. They were all dead when they got here. I do not know whether it has been thoroughly demonstrated as to how long the ova would live. They can stand a good deal of heat and a good deal of cold and possibly Dr. Gunn would be better informed on that line than myself.

DR. HERBERT GUNN, San Francisco: On account of the number of patients examined it was impossible to make relative counts. All that was done was a rapid count for eosinophilia, and that was apparent after thirty cells were counted. Ordinarily 100 cells were counted. Thymol I have used in large doses in a patient with marked nephritis of chronic character without any ill effect whatever. I have used the eucalyptus and chloroform mixture quite extensively and never had any ill effects from it. Thymol I have used in clinic work in San Francisco, depending on the patients to carry out directions as to preparation and after treatment. I had one patient who was pretty badly poisoned. I saw another case of poisoning in a hospital and only a moderate dose of thymol had been taken. I think, however, that it has been shown that thymol can be given without much danger when reasonable precautions are taken. At the present time in clinic work and when patients are not to be under observation during treatment, I use eucalyptus and chloroform exclusively. The nausea which frequently results when these drugs are given in castor oil may be avoided if they are administered in capsules. Fifteen minims of eucalyptol and 45 minims of chloroform are put into eight No. 1 capsules. These are sealed with a little water and enclosed in No. 0 capsules, also sealed, and then covered slightly with salol. These are administered at intervals for an hour. I have used this without producing the slightest trouble or irritation. The treatment is, of course, preceded and followed by a laxative. I think Dr. Endicott is perfectly right in regard to the mortality in the mines. I know when I was up there we saw many persons on the streets who presented evidence of grave anemia. In San Francisco I have had two deaths. One was in a Spanish woman who came from Honolulu and who had a hemoglobin of 30 or 40 and general anasarca. Another case I had was in a young Porto Rican boy who had also been in Honolulu and who died of inanition, having been sick a long time. I recently had referred to me in San Francisco a young student who had worked in the mines in Jackson for two months during a vacation. His temperature was 103 F., hemoglobin about 60. The peculiar muddy color was pronounced and he was very sick. He had been unable to keep up with his work at the university for months. The temperature in hookworm disease is quite frequently irregular. I have seen cases in which the temperature ran along so that it was suspected that the patients had malaria or typhoid. Frequently there is a slight fever. One of the cases I saw in the mines had been diagnosed as appendicitis; the symptoms disappeared immediately after treatment. A second case in which this diagnosis was made was seen in San Francisco. The point Dr. Colbert brings out regarding the Mexicans is very important. I had no idea that there were so many coming in and it shows that there should be some examination made on the Mexican border. Such inspection to be of any value would necessitate the routine examination of the stools or blood, as many of the hookworm carriers present no outward evidence of the disease. Regarding the life of the parasite, ova of the hookworm have remained alive for over a year in the laboratory, and the probabilities are that, under favorable conditions, they would live as long in the mines. As to the life of the parasite in the body, I have had cases in which it was alive for seven or eight years and I believe in estimating whether a case has originated here or outside one should give nine or ten years as being the limit of time. In regard to the material used for destroying the ova, it is claimed that common salt is one of the most efficient for preventing the growth of the ova in the soil.

BRAIN SURGERY *

CASSIUS C. ROGERS, A.M., M.D.
CHICAGO

I wish to consider briefly a series of thirty-five cases of unfavorable intracranial surgical lesions in which I have operated, comparing the results obtained in the cases of patients operated on early with the results obtained in the cases of those operated on late.

The results have not been flattering, but when we consider the duration and seriousness of the malady, the results are perhaps as satisfactory as those obtained in other surgical conditions that have been as long neglected and injudiciously treated.

Attempts are at once made to arrest hemorrhage, evacuate and drain abscesses, remove or drain cysts and remove tumors when located in accessible locations in all cavities except the cranial. Why should this be the exception when so often the hemorrhage, abscess, cyst or tumor can be so easily, correctly and accurately diagnosed and located, especially when it is located in focal areas, and frequently when no focal symptoms are present, the lesions being located in a silent area?

Time should be taken and careful and systematic examination should be made; under no consideration except in emergencies should the skull be opened until all means have been exhausted in the attempt to diagnose and locate the lesions. Skiagraphs of anterior, posterior and lateral views should be taken. The Wassermann and tuberculin tests should always be made as well as a complete blood test and uranalysis. And above all, if the patient is mentally impaired, he should be under close observation until all peculiarities are noted and their meaning fully interpreted. When at last operation is decided on, the site should be located and a large skin and osseous flap reflected, making possible the examination of a large area of the brain.

HEMORRHAGE

Hemorrhage due to trauma or to other causes may be classified under four heads: Intraventricular; intracerebral as in Case 4, Table 1, Series 1; subdural as in Case 8, Table 1, Series 1; supradural as in Case 11, Table 1, Series 1. It is the last two varieties that I wish to consider surgically.

In the subdural, the blood is at once distributed over a large area, being carried by the circulating cerebral spinal fluid. A general irritation is soon produced, perhaps at first it is mild, but later the patient may develop marked and diffuse muscular twitching and violent clonic and tonic movements with symptoms of intracranial pressure. The withdrawal of cerebro-

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

spinal fluid by lumbar puncture demonstrates the presence of blood. If the hemorrhage is severe, the symptoms are exaggerated, intracranial pressure is soon produced, and unconsciousness may be the result. In many of these cases the patients are relieved almost instantly and often permanently, by simply relieving intracranial pressure by decompression and by the opening of the dura.

Supradural hemorrhage is more localized and usually at the site of injury. If slight, there may be only local headache; if extensive there may be all the symptoms of intracranial pressure, headache, vomiting, vertigo, slow pulse, slow respirations and at last unconsciousness. In the former condition, if the symptoms are not relieved in a few days, the clot should be evacuated through a large opening in the skull; in the latter condition this should always be done:

First, to prevent infection of the clot, thus preventing the formation of an abscess, and second, to prevent organization and calcification of the clot, thus preventing irritation and adhesions which later produce epilepsy.

Intracranial pressure sufficient to cause headache, cerebral or projectile vomiting (vomiting without nausea, irrespective of the ingestion of food) and choked disk that is not improved in three weeks and relieved after six weeks of internal medication should

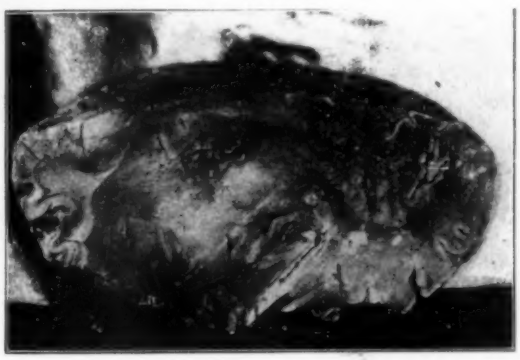

Fig. 1.—Hemorrhagic cysts within the brain.

be considered a surgical case and relieved by removing the cause, if located in a site amenable to surgery, or by subtemporal decompression (Cushing's method) if the lesion is in an unfavorable surgical location.

Many conditions such as hemorrhage, edema, avascular gumma, etc., which stubbornly resisted such treatment before the intracranial pressure was relieved will readily yield to internal medicine after decompression.

Following injuries to the head, if the patient is rendered unconscious, regains consciousness in a short time and then again gradually becomes unconscious, and if the respirations are slow, deep and labored, the pulse slow, full and bounding, or weak, the temperature normal or subnormal, I make it a rule to advise operative interference at once, to relieve pressure produced by either hemorrhage or edema and thus to prevent complications and an unfavorable termination, using for the anesthesia, chloroform, and recently, gas (Crile method). Do not procrastinate in these cases; do as little as possible as quickly and thoroughly as possible, to assist the patient past the critical period; later perform a more thorough and complete operation if necessary.

ABSCESSES

Supradural abscesses originating from acute or chronic suppurative otitis media should be freely drained by removing a plate of skull just above the mastoid and drainage established. Draining through the roof of the mastoid will not give adequate drainage.

Subdural or intracerebral abscesses should be drained by removing a large plate of skull from over the region of the abscess. The dura should be freely opened, and if subdural, the abscess should be drained. If the abscess is intracerebral, the dura should be opened and evacuation of the abscess delayed until adhesions form between the dura and brain, thus preventing diffuse meningitis.

Subdural, supradural and intracerebral abscesses may persist for years and may date back to some slight injury produced many years before and long since forgotten; in some cases, the patients afflicted with them have spent many years in our state institutions for the insane for the want of a correct diagnosis and proper treatment.

CYSTS

Cysts result from many causes but frequently from irritation produced by small hemorrhages. They are

Fig. 2.—Large temporosphenoidal abscess. Series 1, Table 1, Case 8.

frequently subarachnoid as described by Krause.[1] The fluid from the cyst will coagulate, while spinal fluid will not. Cysts may be the result of liquefied glioma.

TUMORS

All varieties of tumors have been found in the brain, malignant and benign. Under all circumstances, the symptoms of headache, dizziness, vertigo, vomiting, impairment of vision, due to intracranial pressure can and should be relieved early by decompression. Constant, persistent, localized headache should demand our most earnest attention and all efforts made to determine the cause, as it is often in the location of the intracranial lesion and can be relieved by relieving tension.

SUMMARY

1. In cases of suspected tumor the patients should not be treated over long periods of time by antisyphilitic remedies.

2. A Wassermann test should always be made and if positive and the gumma is avascular, the tumor will not

1. Krause; Surgery of the Brain, p. 53.

SERIES 1.—TABLE 1.—ABSCESS OF BRAIN *

In each case family history was negative; vomiting and headache were present. All patients were operated on (trephined and drained abscess), the anesthetic in each case being chloroform.

Case Number	Sex	Age	Nationality	Injury	Duration of Illness	Mental State	Epilepsy	Pulse	Respiration	Temperature	Wassermann †	Operative Findings	Location	Etiology ‡	Result	Died After Operation	Cause	Sent by	Hospital	Entered Hospital
1	M.	20	Italian...	No.	2 years.	Unconscious..	—	60	20	101 104	0	Abscess.....	T. sphen. lobe	C. S. O. M.....	Died.	48 hrs.	Mening.	Dr. Good.....	E. D.	1/16/11
2	M.	23	German..	No.	9 days..	Cloudy	—	72	18	99 102	0	Abscess.....	T. sphen. lobe	A. S. O. M.....	Cured	.....	.....	Dr. Good.....	E. D.	2/17/11
3	M.	22	German..	No.	4 years.	Normal.....	+	75	20	97.5 99.6	0	Extradural abscess	Temp. sphen. reg.	C. S. O. M.....	Cured	.....	.....	Self.....	F. W.	12/12/10
4	M.	51	American	?	4½ yrs.	Cloudy	+	Slow	Slow	Nor.	—	Abscess.....	T. sphen. lobe	?	Died.	5 days	Mening.	Dr. Schwartz.	F. W.	.....
5	M.	4	American	No.	3 mos..	Unconscious..	—	..	..	.....	—	Abscess.....	T. sphen. lobe	A. S. O. M.....	Died.	3 days	Mening.	Dr. Good.....	F. W.	6/21/10
6	M.	9	French..	No.	6 weeks.	Unconscious..	—	Slow	Slow	100 103	0	Abscess.....	Extr. dur.; T. sphen. reg.	A. S. O. M.....	Cured	.....	.....	Dr. Stoll.....	F. W.	12/13/09
7	M.	9	American	No.	2 mos..	Semiconscious	—	Slow	Slow	103	0	Abscess.....	Extr. dur.; T. sphen. reg.	A. S. O. M.....	Cured	.....	.....	Dr. Brode....	R. B.	2/20/10
8	M.	59	German..	Yes	21 days..	Unconscious..	—	Slow	Slow	.....	0	Intradural abscess	T. sphen. lobe	Fract. of skull.	Died.	47 days	Sepsis..	Dr. Stoll.....	F. W.	12/11/10
9	F.	6	American	Yes	6 mos..	Unconscious..	—	Slow	Slow	Nor.	0	Abscess.....	Occ. lobe.....	Fract. of skull.	Died.	12 days	Mening.	Dr. Wolfe....	F. W.	10/28/06
10	F.	14	American	?	2 years.	Normal.....	—	..	..	.....	—	Nec. of skull; T. B. abscess	Occ.reg.....	Necros. of skull	Cured	.....	.....	Self.....	F. W.	12/28/07
11	F.	47	German..	Yes	16 years.	Irritable.....	+	104	20	101	—	T. B. abscess	Occ.reg.....	Necros. of skull	Cured	.....	.....	Dr. Weissenb.	F. W.	3/../08

* Number of cases, 11; intradural abscess, 8; patients died, 4; extradural abscess, 3; patients died, 0; suppurative otitis media, 7; patients died, 3; fractures of skull, 4; patients died, 1.
† Zero in this and the following table indicates that no Wassermann test was made.
‡ In this column C. S. O. M. means chronic suppurative otitis media; A. S. O. M. means acute suppurative otitis media.

SERIES 2.—TABLE 2.—TUMORS AND CYSTS OF BRAIN *

In each case headache and vomiting were present; pulse slow, respiration slow, temperature normal. All patients were operated on, the anesthetic in all cases being chloroform.

Case Number	Sex	Age	Nationality	Duration of Illness	Mental State	Epilepsy	Wassermann	Paralysis	Eyes	Operation	Babinski †	Result	Died After Operation	Cause	Hospital	Sent by	Diagnosis	Autopsy	Entered Hospital
1	M.	14	German..	6 mos..	Normal....	+	—	No	Choked disk	Decompres.	++	Died ...	6 mos.	B. tumor	F. W.	Dr. Seufert..	Tumor cerebell.	Confirm.	
2	F.	35	Jewish.	14 years.	Impairment.	+	—	Left arm and leg.	Impaired vis	Decompres.	+	No imp..	.....	.....	F. W.	Dr. Heym..	r. mot. area.	diagnos.	4/ 6 /10
3	F.	18	Amer...	.....	Unconscious	—	—	.....	Almost blind	Decompres.	+	Died ...	.....	B. tumor	F. W.	Dr. Seufert..	Tumor t. sp. reg.	.....	4/10/10
4	F.	32	Amer...	1½ years.	Unconscious	—	+	Left side	Blind	Decompres. R. temp....	+	Died ...	40 days	Mening.	F. W.	Dr. Brode...	Tumor base of brain.	Refused...	12/18/09
5	M.	51	German..	3 mos..	Semicon....	—	0	Right side	Impaired vis	Decompres. L. temp....	+	Cured ..	.....	.....	S....	Dr. Campbell	Tumor r. mot. area; gumma.	Confirm. diagnosis.	4/13/09
6	F.	16	Amer...	3 years.	Normal.....	+	+	No	Impaired vi	Decompres. L. temp. reg.	++	Improved	.....	.....	F. W.	Dr. Sheets..	Gumma l. mot. area.	.....	5/ 4 /11
7	F.	44	Amer...	2½ years.	Normal....	—	+	Right side partial.	Choked disk	L. pariet. base flap drain	++	Cured ..	.....	.....	F. W.	Self.....	Gumma cerebell.	.....	7/22/10
8	M.	26	Amer...	6 mos..	Irres.....	+	+	Right arm	Poor vision	Occipital decompres....	++	Improved	.....	.....	F. W.	Dr. Orndorff.	Cysts in mot. area.	.....	1/22/08
9	F.	2½	Amer...	2 years.	Normal.....	+	+	Limbs spastic ...	Vision good	L. parietal decompres. subarach.....	++	Improved	.....	.....	M. T.	Self.....	Cerebell. cyst; gumma.	.....	2/22/10
10	M.	53	Amer...	2 years.	Irres.....	+	—	Left side	Poor vision	Raised depres. fracture.	++	Died ...	4 days	Nephrit. pneum	F. W.	Self.....	Subarach. cysts.	.....	12/22/10
11	F.	8	Amer...	4 mos..	Unconscious	+	—	Right side	Almost blind	Decompres. motor area..	++	Died ...	4 days	Cerebr. irritat	F. W.	Self.....	Cyst from old blood-clot.	Confirm. diagnos.	11/10/10
																	Large cyst l. mot. area.	.....	7/ 9 /10

* Number of cases, 11; tumors, 6; patients died, 3; not improved, 1; cured, 1; improved, 1; cysts, 5; patients died, 2; not improved, 0; cured, 1; improved, 2.
† Babinski + one foot, ++ both feet.

yield to antisyphilitic treatment until pressure is relieved.[2]

3. The patient should have the benefit of early operative interference.

4. Intracranial hemorrhage should be evacuated in all cases in which the patient lives long enough to secure a skilled surgeon to relieve pressure, to prevent infection and abscess formation, and to prevent adhesions which will produce epilepsy in future years.

5. Intracranial pressure should be relieved by decompression to relieve and prevent constant and localized headaches, cerebral vomiting and impairment of vision.

6. Antisyphilitic remedies should not be given over long periods of time unless marked improvement is obtained within from three to six weeks.

7. Tuberculosis test should be made in all suspicious cases, in which the presence of tuberculosis is not positively known.

8. Epilepsy seldom develops before eighteen months after injury, and may develop many years later.

REPORTS OF CASES

SERIES 1 (Table 1).—CASE 4.—Mr. W., aged 51, American, clerk, four years previous to entering the Willard Hospital Jan. 6, 1909, had a stroke of paralysis involving the right side. This slowly improved until the patient was able to be up and around and at his work.

A year later he commenced to have temporal headaches on the left side, and for three years sought medical aid without relief. Jan. 7, 1909, I opened the skull in the left temporal region, found a large abscess in the temporal sphenoid lobe and drained it (Figure 1). Patient died on the fifth day from acute meningitis. Autopsy showed cysts of the brain and hemorrhagic areas.

SERIES 1 (Table 1).—CASE 8.—Mr. K., aged 50, German, contractor. Entered the Willard Hospital Dec. 12, 1910. Twenty-one days before entering the hospital while on his way to work he had been struck by a street car and rendered unconscious. He was taken to a hospital and treated. On the twenty-first day there was no sign of return of consciousness. He became very restless and noisy. His pulse was slow, his temperature was 102, and his respirations were slow and deep. He developed paralysis of the left side. He was transferred to the Willard Hospital, where I first saw him.

The diagnosis was fracture of the skull with intracranial hemorrhage. I advised operation. December 12 I opened the skull over the right motor area and found the large subdural hemorrhage (Fig. 2). The dura was opened and a large blood-clot as well as a large quantity of liquid blood was evacuated. The patient was returned to bed; he was conscious and recognized his family about twenty-four hours after the operation. He remained conscious for one week, when he again complained of severe headachs in the right mastoid and supramastoid region. Two days later I advised a second operation, as the patient again developed delirium. The radical mastoid was done, as well as removing a plate of skull over the mastoid region. An abscess was found in the temporosphenoidal lobe and was drained. The patient improved for a few days and then gradually grew worse.

We again opened and explored in the temporal region, draining another abscess. In all, we drained three abscesses in the forty-seven days that the patient was under our care. He died Jan. 27, 1911, forty-seven days after entering the hospital and two days after the last operation, from an abscess in the templar sphenoidal lobe. Autopsy was held by the coroner physician, Dr. Hunter, who gave the following report: "Patient came to his death from multiple abscesses of the brain, following an injury sixty-eight days previous to his death."

Summary.—Fracture of the vault and base of the skull; patient unconscious twenty-one days before operation; conscious twenty-four hours after operation; unconscious eight days after operation, and unconscious or semi-conscious until death.

SERIES 2 (Table 2).—CASE 4.—Mrs. D., aged 32, housewife, American, mother of four children—healthy, about one and one-half years before entering the Willard Hospital (April 13, 1909) complained of headache on the right side. Diagnosis, hysteria. Epilepsy followed. Headache became worse and worse, with cerebral vomiting, unconsciousness, and almost complete blindness. Patient entered Willard Hospital having been unconscious for about two weeks; left hemiplegia. Right motor area was operated on; dura mater was opened; brain bulged; tumor elicited but could not be removed; plate of bone was removed and skin sutured. Large tumor developed. Later skin separated and cerebral fungi formed. Patient gained consciousness; talked naturally and freely; could recognize her friends. She died May 29, forty-six days after the operation. At autopsy, gumma of brain was found with syphilitic meningitis (Fig. 3).

SERIES 2 (Table 2).—CASE 11.—M. P., aged 8, entered hospital July 9, 1910; died July 19. March 1 patient came home from school feeling tired. A physician was called. There was some fever. The diagnosis was grip. Patient stayed home from school three weeks. Three weeks later had vomiting without nausea associated with headache, left parietal region, lasting twenty-four hours. Diagnosis was acute gastritis. Headache and vomiting continued at intervals until June 25, when the patient became unconscious, remaining so for twenty-four hours. Right hemiplegia was present on return of consciousness. July 9 patient entered Willard Hospital with right

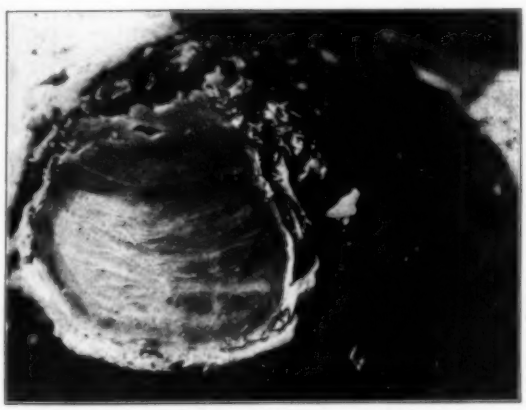

Fig. 3.—Chronic syphilitic meningitis. Series 2, Table 2, Case 4.

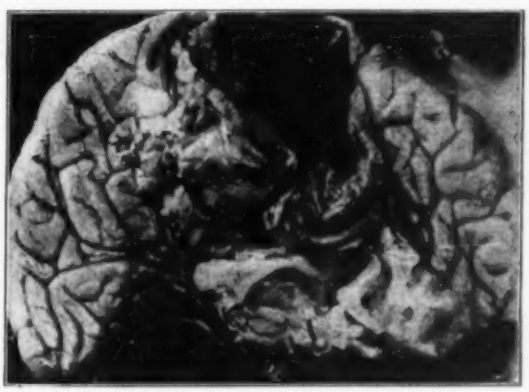

Fig. 4.—Multiple cysts of the brain, Table 2, Case 11.

2. MacEwen: (Glasgow) Paper read at International Medical Congress, Budapest, 1909, Section vii, Report xliii.

TABLE 3.—FRACTURES OF SKULL WITH INTRACRANIAL HEMORRHAGE

No.	Name	Sex	Age	Nationality	Occupation	Injury	Fracture	Scalp	Paralysis	Mental State	Operation	Duration of Injury	Hospital	Date	Result	Died after operation	Causes of death
1	R	M	47	Irish	Painter	Fell from ladder 7 feet	Parietal base middle fossa	Lacerated	L. side	Unconscious	Opened skull and dura evacuated clot and drained	7 days	R.B.	1-31, '11	Died	6 days	Pneumonia
2	K	M	55	Irish	Bricklayer	Fell down steps	Temp. region, around occip. region, and temp. region of opposite side	Large hematoma	R. side	Unconscious	Opened skull and dura evacuated clot and drained	1 day	F.W.	3-5, '11	Died	6 hrs.	Hemorrhage
3	P	M	40	Ger.	Contractor	Scaffold fell	Parieto-occipital	Lacerated	None	Conscious	Removed fragments of skull	3 hours	F.W.	9-22, '08	Cured		
4	M	F	39	Am.	Modiste	Fell from moving car	Occipital region	Lacerated	None	Unconscious	Opened skull, evacuated extra dural clot	3 days	F.W.	10-10, '07	Cured		
5	B	M	31	Am.	Student	Struck by moving car	L. front lobe	Lacerated	None	Unconscious	Opened skull, drained extra dural clot	3 days	F.W.	3-18, '09	Cured		
6	F	M	7	Am.	Child	Fell down stairs	L. motor area	Negative	Constant jerking of all extremities	Unconscious	Opened skull and dura, L. motor area	3 hours	F.W.	7-6, '08	Cured		
7	P	F	40	Am.	House-wife	None	None	Negative	L. side	Unconscious	Opened skull, R. motor area	8 days	F.W.	10-21, '09	Died	24 hrs.	Cerebral hemorrhage
8	B	F	65	Jew.	House wife	Fell on stairs	Parieto-occipital	Swollen	R. side	Unconscious	Opened skull and dura, L. motor area, large clot	8 days	F.W.	1-30, '11	Died	3 days	Cerebral hemorrhage
9	L	M	42	Jew.	Contractor	Scaffold fell	R. motor area	Lacerated	L. side	Unconscious	Opened skull, R. motor area	7 days	F.W.	4-11, '10	Died	6 hrs.	Cerebral hemorrhage
10	P	F	14	Polish	School-girl	Jumped from porch 14 feet	R. motor area	Negative	L. side	Epilepsy	R. motor area decompressed	2 years	F.W	10-5, '08	Epilepsy cured, greatly impr. paral.		
11	B	M	28	Am.	Laborer	Kicked by horse	R. front eminence	Lacerated	None	Epilepsy	Opened skull, R. front eminence	6 years	F.W.	3-, '06	Cured		
12	C	M	4	Am.	Child	Forceps delivery	R. motor area	Lacerated	L. side	Epilepsy	Opened skull, R. motor area	4 years	F.W.	3-15, '09	Epilepsy cured, paral. greatly improved		
13	W	M	21	Am.	Farmer	Kicked by horse	L. front	Lacerated	None	Epilepsy	Removed deformed fracture	15 years	F.W.	3-, '09	Died	1 week	Pneumonia

Number of cases, 13; number of deaths, 6; average time of unconsciousness before operation, 8 days. All patients who received surgical interference within 24 hours lived.

hemiplegia, vomiting at intervals, severe headache and Babinski constant both feet. Choked disk was marked. Diagnosis was marked intracranial pressure. I advised decompression to relieve pressure (refused). I sought expert opinions; all disagreed with me. July 10, patient was unconscious four hours; regained consciousness but complained of severe headache. July 11, headache was very severe. Patient improved from July 12 until on July 15, she went into complete coma. She was operated on July 15 under chloroform anesthesia. The child gained consciousness after large cyst was evacuated. Died double pneumonia July 19 (Fig. 4).

NOTE:—Complete histories of all cases are in my possession but are not submitted for publication on account of their length.

I am indebted to Dr. B. H. Orndorff for all laboratory work done.

7 Madison Street.

ANESTHESIA FROM NITROUS OXID-OXYGEN PLUS CARBON DIOXID

WITH SPECIAL REFERENCE TO COMBATING SHOCK *

E. G. MARTIN, M.D.
DETROIT

My purpose in presenting a paper on nitrous oxid-oxygen is to bring out, as forcefully and briefly as possible, its advantages and the added value of rebreathing to combat shock.

Some forty years ago, Dr. Andrews of Chicago discovered that by adding oxygen to nitrous oxid during its administration, the cyanosis was eliminated without impairment to its anesthetic properties. Since that time nitrous oxid has been widely used, but considered mostly as a dental anesthetic and for use in very minor surgical operations; the layman knows it as "laughing gas." During the last few years attention has been called to nitrous oxid anesthesia more seriously, and after extensive use and investigation by some of our leading surgeons—such as Crile, Meyer, Halsted, Kelley, Bevan, and the extended laboratory investigations of Hamburger and Ewing—of the comparative effects of nitrous oxid, ether, and chloroform narcosis on the blood, the American Medical Association reports through its commission on anesthesia that "as a routine anesthetic, nitrous oxid has a peculiar value, . . . and in the hands of highly skilled anesthetists, the method is the best yet devised."

Hamburger and Ewing say as to ether:

> The color index shows a rather constant drop, starting immediately after anesthesia and reaching its lowest point on the fifth and sixth days. This would indicate a relative loss of hemoglobin per cell, and again is unlike nitrous oxid results, in which the only sign of a low color index is found immediately after the anesthetic mask is removed, and which is completely gone in two hours.
>
> The volume-index likewise shows an immediate loss, which is most marked in twenty-four hours, and again on the fifth and seventh days. In nitrous oxid readings, the percentage volume remained unchanged throughout.

A demonstrable anemia is produced even after a fifteen-minute anesthesia of ether that does not begin to improve until after the fifth day, and as Coburn[1] says, "such an effect as this which does not begin to improve until after the fifth day must certainly retard convalescence even in favorable cases, and in critical cases may be the determining factor in producing a fatal termination."

It has been recognized for some time that ether increases the toxemia of infection and impedes the functional activity of the leukocytes thus lessening the patient's resistance. We have been advised against administering ether to tuberculous patients, the result often being the establishment of new foci of infection or the lighting up of an old one. Is this due to the irritant properties alone, or is it more reasonable to believe that it is due to the lowered resistance produced? Further, is it not a logical deduction to make, that patients whom we believe to have no infection, and even those in the so-called simple cases for operation, should have the benefit of an anesthetic that causes no such trouble, that does not, like ether, reduce the functional activity of the leukocytes and retard Nature's forces?

C. B. Parker[2] reports 218 cases of nitrous oxid-oxygen anesthesia, of which nearly all were major operations and the subjects unfavorable for any anesthesia. Among them were patients suffering from organic disease of the heart, kidneys, and lungs, wasting and suppurative conditions, asthma, empyema, diabetes, and alcoholism, the very old and the very young; patients greatly overweight, those who had developed alarming symptoms in previous attempts with ether or chloroform, and those who had experienced the distress of previous etherization. Parker came to the conclusion that nitrous oxid was safer and more agreeable.

Peairs[3] says that "nitrous oxid and oxygen is the safest of all anesthetics; post-operative complications are less frequent," and that its more general use should be encouraged.

In the so-called "borderland" cases, those of grave infections and operations on the very ill, the consensus of opinion seems to be that nitrous oxid-oxygen anesthesia gives the chance to live and is often the hinge on which an ebbing life may turn. In the "inevitably fatal" cases, Crile says: "Not a patient showed the rapid march to fatality immediately following the operation, which occasionally follows ether."

It would seem advisable to endorse the report of the Anesthesia Committee at St. Louis in 1910, that gas in the hands of highly skilled anesthetists as a routine anesthetic is the best method yet devised, when such men as George W. Crile of Cleveland use it in from two to twelve operations every day and grow more enthusiastic in its praise as their experience increases. At a recognized medical center such as Johns Hopkins Hospital, it is in general use every day by such men as Howard A. Kelley and is advocated enthusiastically by Gatch, an authority on the subject of rebreathing, as the best and safest anesthetic.

Coburn[1] quotes Dr. Frederick Hewitt, a leading authority of London, as saying: "There is no form of anesthesia at present known which is so devoid of danger as that which results from nitrous oxid when administered with a sufficient percentage of oxygen to prevent all asphyxial complications."

When such reports come from such sources we must, it would seem, refrain from settling down with too much complacency in this regard, if not in justice to the profession, out of duty to the patients. I wish to discuss briefly the newest and what I believe to be the best method of using nitrous oxid-oxygen, namely, by rebreathing.

It has been found that in rebreathing one's own carbon dioxid during the administration of nitrous oxid and oxygen, the patient's general condition improves in every

* Read before the Wayne County Medical Society, April 10, 1911.

1. Coburn, R. C.: The Advantages of Nitrous Oxid-Oxygen Anesthesia, THE JOURNAL A. M. A., Feb. 18, 1911, p. 499.
2. Parker, C. B.: Cleveland Med. Jour., July, 1910.
3. Peairs: THE JOURNAL A. M. A., April 30, 1910, p. 1422.

respect, pulse, respiration and general well-being, and as an explanation for these facts I wish to quote from an editorial[4] in THE JOURNAL regarding a series of articles by Yandell Henderson of New Haven, dealing with an elaborate experimental investigation of shock from an entirely new basis.

Briefly, Henderson believes that shock primarily is due to a diminished amount of carbon dioxid in the blood and tissues of the body. This lack of the normal amount of carbon dioxid is termed acapnia. His experimental results are most interesting and they are full of much practical suggestion to the surgeon, because they seem to show that some of the technic, commonly practiced, is based on erroneous ideas. In a short summary of this kind, necessarily only a few of the most interesting features of the work can be cited.

Henderson reviews the literature of carbon dioxid as a hormone, or chemical regulator of respiration, to show that the failure of circulation and of the nervous system in shock and the cessation of respiration in true apnea must logically be referred to the same cause,—acapnia.

Experiments on dogs, which were devised to bring about a sudden great diminution in the carbon dioxid content of arterial blood, resulted in an increase of the heart-rate up to the point of cardiac tetanus and death. Voluntarily forced breathing in man induces symptoms resembling shock, probably because the increased pulmonary ventilation results in an abnormally great exhalation of carbon dioxid. Pain, ether, excitement, sorrow, fear, and other conditions inducing shock, involve excessive respiration. Because a marked diminution in the amount of carbon dioxid in the arterial blood creates a lack of the normal stimulation of respiration, excessive artificial respiration in dogs for twenty-five or thirty minutes, by causing greatly increased pulmonary ventilation, is followed by a cessation of breathing so prolonged that the heart fails for lack of oxygen. During this anoxemia an acidosis occurs, owing to an accumulation in the blood of products of incomplete tissue combustion. The administration of carbon dioxid gas during the period of cessation of respiration, induces an immediate return of natural breathing; and the administration of oxygen affords ideal conditions for the prevention of the asphyxial acidosis. Anesthetics tend to prevent shock, because they diminish the excessive respiration caused by pain. The respiratory excitement during the initial stages of anesthesia, diminishes the carbon dioxid content of the blood, and thus tends to induce a subsequent failure of respiration. Similarly, ether, unless neutralized by morphin, often causes (in dogs) hyperpnea, acapnia and a consequent fatal apnea. Of particular interest in this connection are observations by W. D. Gatch in several hundred anesthesias, during which patients were allowed to rebreathe some of their own carbon dioxid. In no instance was there any evidence of shock. These observations seem to confirm Henderson's theory to a greater or less degree; and they lend evidence to his statement that "skilful anesthesia consists in maintaining the threshold of the respiratory center for carbon dioxid at a nearly normal level, and in avoiding the development of either acapnia or hypercapnia."

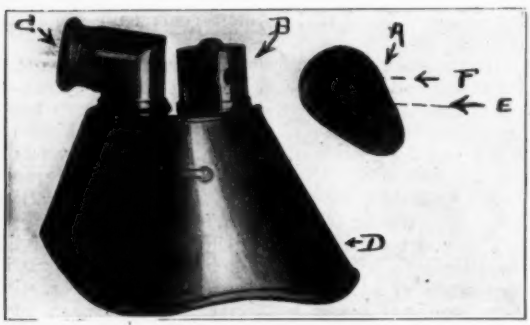

Fig. 1.—Apparatus devised by the author for the administration of nitrous-oxid—oxygen plus carbon-dioxid. A, rubber cushion (underside); B, exit valve; C, elbow connection; D, mask without cushion; E, inner aspect of B; F, inner aspect of C.

I have been using the rebreathing method for nearly a year, and have observed that the rapid pulse becomes slower, seldom faster or weaker, with an increase in the tension and the rapid respiration sometimes seen, becomes slower and deeper. No patients have shown any symptoms of shock and all have seemed improved, being in a more tranquil state of mind and without the depressing after-effects of ether.

As Gatch[5] observes, "very sick patients with a rapid pulse and quick shallow respiration actually seem benefitted by this form of anesthesia." The duration of time that I have continued this anesthesia runs from five to one hundred and twenty-five minutes. It has been my practice recently to administer a hypodermic injection of morphin gr. 1/6, scopolamin hydrobromate gr. 1/150, one hour preceding the operation, and where the patient is not tranquil at the half hour, the dose is repeated. This has proved most satisfactory, giving a smoother and more relaxed anesthesia. If relaxation is not sufficient, ether is administered for five or ten minutes, returning to the gas with relaxation as desired.

Fig. 2.—Showing inhaler in use on child—rebreathing.

The apparatus which I have devised for the purpose is shown in Figure 1, while Figure 2 shows it in actual use, held in position by an elastic tape, on a child ten years old. This also illustrates the adjustability of the rubber cushion, which is made by stretching the wrist of a rubber glove over the edge of the mask (A). The direct connection of the rubber bag to the mask allows perfect freedom in rebreathing. There is but one valve to be operated (B) and that requires but a slight turn about once every two minutes. By this exit valve the bag is emptied in five or six breaths, or at once by pressure on the bag. The elbow connection may be turned to one side or the other if the straight position shown seems undesirable. If rebreathing is not desired there is a place on the inner end of the elbow connection (which projects into the mask) to insert a little round tin float-valve (F), which prevents exhaling into the bag; when this valve is in use the valve cap (B) is left open. The rubber tube shown ends in a Y connection

4. Feb. 11, 1911, p. 424.

5. Gatch: THE JOURNAL A. M. A., May 5, 1910, p. 778.

to a nitrous oxid and an oxygen cylinder (extra Y and cylinder may be attached if desired).

The bag is filled, ordinarily, about half full of nitrous oxid, followed by a small spurt of oxygen, sufficient, as experience teaches, to keep the color good.

I have used this apparatus successfully for about one year; it is the result of considerable experiment on my part to devise an apparatus that is light (about one pound), sterilizable, unbreakable and inexpensive.

It has been my aim to show by the experiments of Henderson on shock that the good reports on nitrous-oxid-oxygen, rebreathing, or autostimulation as it might be termed, are founded on scientific laboratory experiments, besides clinical observations, and that this anesthesia is not a mere fad to be cast lightly aside. It is surprising to find so many who are wholly unfamiliar with the progress in anesthesia and who even seem unwilling to believe that there is a necessity for improvement in the present method of using ether alone.

It is not requested that nitrous-oxygen-carbon dioxid should be accepted as a panacea for all the evils attendant on anesthesia, nor can it be expected that ether will be discarded as chloroform has been in the past, but if the clinical studies, the experimental research and the conclusions of so many eminently reliable men are considered, it would seem that but little argument could be advanced against its superiority as an anesthetic.

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MYOTONIA ATROPHICA

WITH A REPORT OF TWO CASES

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AND
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The symptom-complex to which Rossolimo[1] gave the name of "myotonia atrophica" is not only an extremely rare disease, but apparently is exceptionally uncommon in America, the two cases reported in 1908 by Ramsay Hunt[2] being the only ones on record. Batten and Gibb,[3] in 1909, collected reports of all the cases which had been described under various titles up to that time, which showed the rather definite clinical picture of myotonia atrophica. They were able to enumerate twenty, and as a result of their study state the following as the cardinal symptoms of the disease:

1. Weakness and wasting of the following muscles, viz.: the orbicular muscles of the mouth and eyes; the temporals and masseters; the vasti muscles of the thighs with the recti femuris frequently escaping completely; the muscles of the anterior tibial groups, resulting in bilateral foot-drop.

2. The myotonic phenomenon evidenced more particularly by a marked difficulty in extending the fingers from a flexed position. The muscles show a diminution of irritability to the faradic current and, to a lesser degree, to galvanic stimulation as well. Certain cases show in localized muscle groups a modified myotonic electrical reaction, namely a slow contraction and slow relaxation to both forms of electricity.

3. The deep reflexes are depressed according to the degree of wasting in those muscles necessary for their production.

There is apparently a frequent tendency for the disease to take on familial characteristics, but this is by no means constant and was not observed in either of our cases.

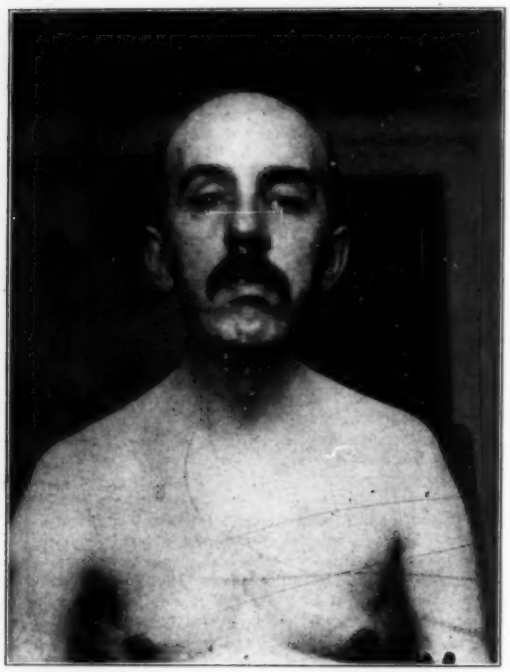
CASE 1.—*History.*—A clerk, G. S., aged 35, was admitted March, 1911, to the out-patient department of the Neurological Institute, in the service of Dr. Fraenkel, by whose courtesy we are enabled to report on the case. The patient complained of weakness in the legs which, however, was not sufficient to produce extreme disability in walking. (He had just walked over one and one-half miles to reach the hospital, and was by no means greatly fatigued.) Two years before coming under observation, he noticed that he was more easily made tired than usual, especially by going upstairs, in doing which it became necessary for him at all times to make use of the bannisters. Later he found that he frequently tripped against small obstacles in his path; in stepping from the roadway to the pavement, he would fail to raise his foot sufficiently to clear the edge of the latter, etc., and the gradual onset of double dropped foot at last produced the characteristic steppage gait suggestive of a high-stepping horse. The patient's general health remained perfect; he had no pain or paresthesiæ; no sphincter trouble, nor at any time any difficulty with vision. Nevertheless, his condition was stated by two or three medical men to be due to incipient tabes dorsalis. His visit to the Neurological Institute was more the result of his wish to be cleared of what he considered to be the unjust charge of antecedent lues than of the hope of cure of his present disease. He had had measles, whooping-cough and a severe attack of scarlet fever in early childhood. During adolescence and early manhood, he had had three separate and serious attacks of diphtheria. Nothing of a neuropathic nature could be discovered in his family history. He was an only child; his mother was alive and in good health, while his father had but recently died of pneumonia at a fairly advanced age.

Examination.—The patient was seen to be a small, poorly built man with the worn mask-like expression characteristic of the myopathic facies. There was no defect of any of the special senses. The movements of the eyeballs were perfect, but there was very marked weakness of the orbicular eye muscles so that the lids were drooped and the eyes could be closed only feebly. The pupils were normal. The temporal fossæ were scaphoid, appearances produced by the complete atrophy of the temporal muscles. The mouth was lax and patulous. The masseters were below normal in size and power, and the strength of the movements of the jaws was distinctly poor. The sternomastoid muscles were completely atrophied, and were represented in each case by a thin fibrous cord. The abolition of these muscles threw the sternal ends of the clavicles into unnatural prominence, together with the other neck muscles which were quite unaffected. The biceps, triceps and deltoid muscles of both arms were weak and considerably wasted. The muscles of the hands and forearms were of normal bulk and power, but it was found that the patient had remarkable difficulty in relaxing the grasp of either hand—an expression of muscular hypertonus which could not be elicited elsewhere in the body. The trunk muscles were normal. In the lower limbs the internal and external vasti muscles were wasted, though there was complete retention of the rectus muscle of each thigh. The anterior tibial muscles and the peronei were wasted on either side so that a condition of bilateral incomplete foot-drop had resulted. There was no sensory change. The triceps and biceps jerks were diminished while those of the wrist were fairly brisk. The abdominal reflexes were equal on the two sides. The knee-jerks were present but equally depressed on the two sides; the ankle jerks could not be obtained. The plantar reflexes were of the normal flexor type. Electrical reactions: the intrinsic muscles of the hands and those of the forearms showed slow contraction and slow relaxation to both faradic and galvanic currents.

CASE 2.—*History.*—The patient, J. F., a Russian Hebrew who had lived for many years in the United States, by trade an insurance agent, was also in Dr. Fraenkel's service at the Neurological Institute. He presented a family history exceptionally free from influences which might be regarded as bearing on the development of his condition. Both his paternal and maternal grandparents showed unusual longevity, while

1. Rossolimo: De la myotonie atrophique, Nouv. iconog. de la Salpêtrière, 1902, p. 63.
2. Hunt, J. Ramsay: Jour. Nerv. and Ment. Dis., 1908, p. 269.
3. Batten and Gibb: Brain, 1909, p. 127.

of his nine brothers and sisters, eight had reached a medically uneventful middle age and the ninth had died as the result of an untreated strangulated hernia. He himself, a married man of 43, of temperate habits, had suffered from no illness with the exception of occasional gastric disturbances, until the onset of the disease for which he presented himself at the clinic. About March, 1908, the patient fell as he was alighting from a street-car, striking heavily upon his right knee and fainting as a result of the accident. He asserts that the trauma to the knee-joint was sufficiently severe to confine him to bed for six weeks, but immediately on arising, he began to perceive a weakness in the right leg which became progressively worse so that he would stub his toe in walking. Simultaneously a cataract began to develop in the left eye; this was subsequently removed. The patient next noticed in turn a diminution in power in the right forearm, the left extremities and, finally, in the muscles which supported the head. The symptom for which the patient sought relief most urgently was an intense fatigue, which, coupled with his loss of power in the extremities, had prevented his working for over a year.



Case 1. G. S., showing hollowed-out temporal fossæ, myopathic facies with dropped eyelids and patulous mouth. Absence of sternomastoid muscles.

He expressly emphasized that at no time had he experienced pain, though of late he suffered great annoyance through weakness of the muscles of deglutition, a diminution of sexual power, and a clouding of vision in the right eye. The sheer effort of undressing in the clinic caused him to perspire profusely and drop back to the couch exhausted, an evidence of the extent to which the disease had progressed.

Examination.—Physically the patient was a moderately emaciated, small, stooped man, whose face showed a peculiar lack of expression, which, without being particularly stupid, seemed vacant, lifeless and tired. He walked with a typical steppage gait, the very effort of which exhausted him so severely that the act appeared laborious. He spoke in a slow, monotonous and subdued tone which produced the impression of tired vocal muscles. The wide, artificially produced irregularity of the left pupil prevented a normal reaction to light, but in the right eye, though reflected light disclosed a beginning cataract, the pupillary response to both light and accommodation remained brisk. The tendon reflexes showed both triceps jerks absent, but the supinator jerks faintly present. Both quadriceps contractions were quite well preserved, but a right Achilles jerk was only faintly retained and the left Achilles could not be elicited. Neither Babinski's sign nor ankle-clonus was present. Epigastric, abdominal and cremasteric reflexes were actively responsive. Sensation was normal. The muscular system revealed myotonia present when the patient made a fist with his left hand. The fingers were relaxed so slowly from the closed position that the patient's hand dropped away from the hand he grasped before his own became fully extended, but after repetition of the movement this difficulty rapidly disappeared. The left side of the face seemed even more relaxed than the right, though the following facial muscles were markedly wasted on both sides, viz., the temporals, producing hollows in the temporal fossæ; the levators palpebræ, causing the lids to droop heavily; the masseters, permitting the cheeks to sink inward and making it difficult for the patient to chew solid food, and the orbicularis oris, which gave a weak expression to the mouth. Perhaps the most striking feature in the whole picture was the total absence of the sternocleidomastoids, but the trapezii were also considerably involved, while the practically total obliteration of the triceps caused the biceps to appear almost hypertrophied by contrast. The extensors of the forearm, especially the left, were weak and flabby. The muscles of the trunk and abdomen had escaped, though both recti abdominalis seemed somewhat relaxed. This weakness, however, was not sufficiently grave to prevent the patient from raising his body from the recumbent position, provided that his head was supported when he made the attempt. In the lower extremities the adductors of the thigh were somewhat weaker than the abductors, and in the leg on either side the tibialis anticus and peronei showed great atrophy. The electrical examination made by Dr. J. W. Stephenson resulted as follows: "There was no complete reaction of degeneration in any of the muscles examined, but with the exception of the right biceps and the flexors and extensors of both forearms, all the muscles showed some alteration of reaction, namely, there was an atypical myotonic reaction. Both triceps, trapezii and deltoids gave no faradic response. These, with the left biceps, showed decreased excitability to galvanism."

While the first of our cases conforms exactly with the clinical picture drawn by Batten and Gibb, it is to be noted that in the second case there occurred in addition an intense muscular weakness and premature bilateral cataract. The former condition is explicable by reason of the advanced stage of the disease, while in regard to the latter it is interesting to note a remarkable family of thirteen members mentioned by Greenfield,[4] of whom six were healthy, two had premature cataract, three myotonia atrophica, and two suffered from both conditions. In view of such a striking and persistent combination of these two conditions it would seem that the association of cataract with the symptoms-complex under discussion is more than accidental and would suggest that both may be abiotrophic in character.

Infant Mortality.—Dr. Jacobi of New York recently gave statistics showing that the industrial conditions in many of our communities are largely responsible for our unnecessarily high infant mortality: "Women working at home are very often worse off even than their sisters in the factory. Their constant treadling of the machine undermines their health. Seamstresses develop anemia, tuberculosis and pelvic diseases. Cigarmakers who work at home develop consumption to the extent of 90 per cent. Such women living in dirty dwellings, without air or light, bear children that are starved before they are born—who are infected with hereditary disease—and are destined either to perish miserably, or, more miserably, to populate asylums, hospitals and penitentiaries."—C. S Sheldon in *Bulletin American Academy of Medicine.*

4. Greenfield: Rev. of Neurol. and Psychiat., 1911, ix, 169.

THE IMPORTANCE OF THE QUANTITATIVE REGULATION OF THE DIET*

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It will generally be admitted that modern methods of infant-feeding have been of very great benefit. It is one of the very few accomplishments in dietetics that the profession may point to with pride. Yet it differs from the older methods of milk feeding chiefly in the fact that the nutritive ingredients of the milk are regulated quantitatively with greater accuracy.

Our grandmothers used to dilute cow's milk in giving it to infants. Their object was to make the milk "less rich" and more digestible, with fewer "curds." They were in reality lowering the percentage of protein, which in cow's milk is too high for infants. Then they sweetened it, apparently to make it more acceptable to the taste. But this also fulfilled the very desirable object of increasing the carbohydrates, which are low in cow's milk as compared with human milk. And further, if the baby did not gain in weight they used "richer" milk, that is, they increased the percentage of fat in the milk mixture, thus adding materially to its nutritive value.

So "modified milk" and "percentage feeding" are not new methods—for milk was always modified—but they represent the introduction of accuracy in the quantitative regulation of the infant's food. It has accomplished so much that at first sight it seems hard to believe that the great advance in infant-feeding is based essentially on so simple a thing as greater accuracy, yet this really is the case. The explanation lies in the fact that this accuracy permits the physician to regulate the amounts of the different foodstuffs—protein, fats and carbohydrates—which comprise the nutritive part of all food. He can do this with sufficient accuracy to allow him to study the effects of such modification of the amounts of the different foodstuffs, and to adapt the diet intelligently to meet the requirements of the individual case. The method needs no defense from us; our object is to use its well-known success as an argument for the extension of the same principle to other fields—to the regulation of the diet of adults in all cases in which greater accuracy will be advantageous.

In general, the regulation of the diet of adults by physicians is not a matter in which the profession can take much pride. With a few directions of "Do take this" and "Do not take that"—the selection of the foods being largely regulated by tradition based on empiricism—the physician leaves the rest to the patient's appetite and the judgment of a nurse or some lay person. This is equivalent in infant-feeding to the direction: "Feed the baby milk"—leaving all other details for the family to work out. It is essentially an absurd position, which is perpetuated by two factors. One is the lack of appreciation by physicians of what may be accomplished by more scientific diet regulation; the other is the difficulty of its application in their hands. This is due largely to the fact that the present generation of physicians was not taught the fundamental facts with any reference to their practical application. This latter defect will soon be remedied, for the importance of the scientific regulation of the diet is being more fully recognized by the profession. The medical schools are beginning to give instruction along these lines, and the coming generation of physicians will be prepared to utilize these valuable measures fully. Even now its value in the treatment of disease has been proved, and an important question for the older physicians to decide is whether they will "keep up with the procession" by adopting this advance in dietetics, or will wait for the more efficient youngsters to crowd them to one side.

You need but to mention the word "diabetes" to the wide-awake physician of to-day and he will recognize that these remarks apply to this disease at least. He knows that the most successful treatment of this disease is based on the careful quantitative regulation of the amounts of carbohydrates allowed in the diet, combined with such an adjustment of the other foodstuffs as to furnish sufficient nutriment for the needs of the system.

The old haphazard methods of treating this disease are no longer justified. Our duty to our patients demands the quantitative regulation of the amount of carbohydrates given in the treatment of diabetes, and the recognized importance of this measure is again cited by us as an argument for the extension of this measure over a wider field.

It has not so generally been recognized that the proper regulation of the amount of protein in the food is almost as important in the treatment of nephritis as is the regulation of the carbohydrates in diabetes. Yet, all will admit that the fundamental principle of the treatment of this disease is to spare the kidneys from unnecessary work. Since one of the chief functions of the kidneys is to eliminate the waste products of nitrogenous metabolism it necessarily follows that we can secure this result best by limiting the amount of the nitrogenous material, or protein, that is taken in the food. This matter has been emphasized by Von Noorden and others, and an article by one of us, delivered before this Section last year, dealt with this matter at length.[1]

A further reason for the quantitative regulation of the diet in diabetes and nephritis is the fact that it is not only necessary to reduce the amounts respectively of carbohydrates in the one case and of protein in the other, but that it is of equal importance to make sure that the patient is getting a diet of sufficient nutritive value to meet the requirements of the system for heat and energy and to offset tissue waste. Unless this is provided for we add insufficient nutrition or partial starvation to the condition of disease already existing. This can best be determined by a calculation of the caloric value of the diet. In order to ascertain this we must know with some approach to accuracy the amounts of food taken, which is another way of expressing the quantitative regulation of the diet.

In another field this same consideration holds. Whenever the heart is affected the question of a sufficient supply of nutriment to enable it to maintain its strength is of vital importance. Unless there is sufficient nourishment the heart-muscle will weaken, and disastrous results will follow. This is of the greatest importance in the so-called reduction cures for obesity. If in these cases the heart is not strong, as is often the case, serious and even fatal damage may be done to the heart by cutting the food down too far or too rapidly. In such cases the reduction can be done safely only when the nutritive value of the diet is followed closely. Furthermore, it hardly needs to be argued that in any system for reducing the weight the quantitative regulation of the diet will enable the physician to study the case more intelligently and to get more satisfactory results than if this

* Read in the Section on Practice of Medicine of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

1. Arnold, H. D.: The Importance of a Low Protein Diet in Chronic Nephritis, THE JOURNAL A. M. A., Dec. 24, 1910, p. 2193.

measure is neglected. This is true whether there is any danger from the heart or not.

In many cases of apparent neurasthenia and debility or malnutrition we have found that a calculation of the diet not only helps in the understanding of the case and in the diagnosis but points the way to treatment and enables us to give a more accurate prognosis.

It is interesting to note that recently the diet in cases of tuberculosis has been the subject of extensive study from this point of view. It has been proved that patients do as well or even better when such study and quantitative regulation provides a well-balanced diet, with an abundant but not excessive amount of nutriment.

In gout and those forms of rheumatism in which metabolism is at fault the quantitative regulation of the food is important. These conditions are not as yet as well understood as we might wish in these respects, but this method will enable us to give more scientific consideration to the problems which these diseases bring up. In this way we may hope for a better chance for a successful solution of these problems. In both diseases the cutting down of the protein of the diet seems advantageous, and in gout that careful regulation of those articles of food that contain purin bodies, which is an essential feature of the treatment, can best be secured by the quantitative regulation of the diet.

We have pointed out a number of conditions in which the quantitative regulation of the diet will be of aid and in many cases it is essential to successful treatment. Few will deny the desirability of such measures. The question arises whether it is practicable in application. In order to carry out these measures we must know with some accuracy the composition of food and we must understand a few of the fundamental principles of dietetics. Fortunately, the more recent books on treatment have taken up these matters in some detail. With some patience and study the matter can be worked out. In many of the diseases mentioned, the text-books or monographs will give the desired information. At first, the work is difficult and time-consuming, because it is new and is more or less complicated, but familiarity soon brings facility, and the results well repay the time and trouble involved. We have used the diet chart prepared by one of us (Arnold) in practice for several years and have found that it simplifies the problem a great deal, and makes it feasible to do this work in private practice satisfactorily, when once the physician is conversant with the method of its use. We have repeatedly found that an intelligent nurse can use these charts not only to record, but to calculate the diet, and this has been done also by intelligent members of the family of the patient. Such reports enable the physician to follow his case with little trouble and to handle it much more intelligently. These charts are published by the W. B. Saunders Company. They are not essential for this work, for all that is essential is for the physician to get his data from any reliable source and he can apply them in any convenient form. Such charts merely bring convenience in such methods. With such an aid we have found it perfectly feasible to carry out this work in practice. From an extended experience with this work we can say with confidence that it is well worth while in any condition where the diet enters as an important factor in treatment. By such means we raise dietetics from unintelligent empiricism to a fairly satisfactory scientific basis.

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ABSTRACT OF DISCUSSION

DR. WILDER TILESTON, New Haven, Conn.: The quantitative regulation of the diet is of extreme importance in the treatment of all conditions of undernutrition and obesity. It is not at all difficult to regulate the diet in this way if one obtains tables showing the nutritive value of foods. Such tables can be obtained from Bulletin 28 of the Department of Agriculture, on the payment of 10 cents. The principles governing the diet of the ill are frequently misunderstood and misapplied—more so than other principles in medicine.

THE THYROID WITH SPECIAL REFERENCE TO HYPERTHYROIDISM AND A NEW METHOD OF TREATMENT

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FORT WAYNE, IND.

The surgical treatment of exophthalmic goiter is based on the hypothesis that the symptoms are due to hypersecretion, or hyperabsorption, or both. In the present state of knowledge concerning the chemistry of the secretion of the thyroid and other ductless glands, this is the best working hypothesis. It is probable, rather than possible, that in the near future we may have specific serums to counteract the various symptoms of thyroid disease, but until we know more than we do now, we can do no better than to work on the theory above given.

Ligation of one or more of the thyroid arteries has proved of benefit in some cases, but in the main the results have been disappointing. If one recalls the arterial supply to the thyroid, one ceases to wonder that this treatment has not proved satisfactory. Ligation of the common carotid does not affect the function of the brain, and, if a sufficient interval is allowed to elapse, both common carotids may be ligated without interfering with the function of the brain. The analogy between the arterial supply of the brain and the thyroid is very close.

Pole ligation, as first suggested by Stamm, would seem to be, theoretically, a more effective operation than arterial ligation, because it at once cuts off a part of the blood-supply to the gland, and a part of the return flow of both blood and lymph, presumably laden with toxic material. Moreover, Stamm's operation produces a greater anemia by virtue of the fact that it reduces the possibility of perfect and prompt reestablishment of the circulation by anastomosis. Ligation of the accompanying vein and artery at the same time should be, and I think is, more effective than ligation of the artery alone, but not so effective as the Stamm operation for the reason that the latter does all that the former does in way of curtailing the circulation of the blood in the thyroid and in addition puts out of commission permanently that portion of thyroid between the double ligations and occludes also the lymphatics of the ligated pole. It has not, however, been employed in a sufficient number of cases to enable one to speak accurately of the results obtained.

Partial thyroidectomy is the most effective treatment we have up to date. This, however, is a major operation and largely because of this fact patients are not subjected to this operation until other treatment has been tried and failed, and the disease has rendered the subject a substandard operative risk. Many of these patients must first be subjected to preliminary rest treatment coupled with one or more ligations before thyroidectomy

can be done with reasonable safety. Again, in many of these patients, operated on late, myocardial and other changes which are permanent have already taken place.

Ochsner and Thompson name nine dangers of thyroidectomy: (1) anesthesia; (2) shock; (3) hemorrhage; (4) hyperthyroidism; (5) infection; (6) recurrent laryngeal nerve injury; (7) injury to parathyroid glands; (8) air embolism; (9) collapse of trachea and consequent asphyxia. To these should be added a tenth, namely, myxedema. It is quite plain that a simple, safe, and effective operation for hyperthyroidism is much to be desired. I believe that injection of boiling water into the gland will fulfil this desire.

While my experience with this method up to date is not sufficient to put it on a firm basis, yet it is enough, I think, to warrant this belief. The method was first used in dogs to demonstrate its safety and its efficiency in destroying normal thyroid tissue and goitrous tissue. These experiments were made for me by my former assistant, Dr. H. K. Mouser, now of Oakwood, Ohio. I have now treated four cases as follows:

CASE 1.—An unmarried woman who was troubled with a goiter was referred to me by Dr. McCaskey in whose hands she had failed to improve under ordinary treatment, so he asked me to inject the goiter with hot water. She had a small bilobed goiter. Into each lobe was injected 40 minims of boiling water. She was asked to remain in bed for a few hours after which she was allowed to get up and be about. In a few days she left the hospital. One month after the operation, she came to the hospital for examination. I saw her a few moments after her arrival. Her pulse was 80, regular and of good volume. She expressed herself as feeling well and she had gained in weight. She said she was able to do her housework and was having no difficulty with her heart. Prior to the injection of hot water she complained much of palpitation of the heart and her pulse at that time varied from 80 to 120. She was to report to either Dr. McCaskey or me in case there was any relapse. Neither of us has heard from her.

Fig. 1.—Case 4 (J. H.). Section after the injections of boiling water, showing connective tissue proliferation and compression of parenchyma. ×265.

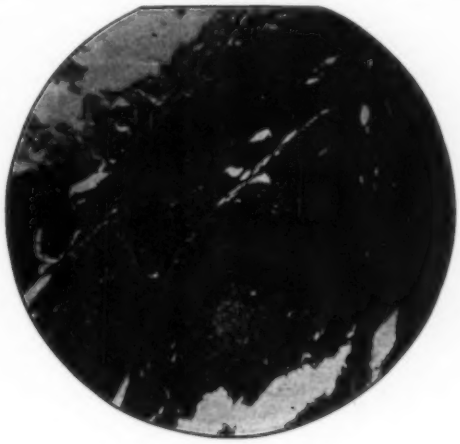

Fig. 2.—Same as Figure 1. ×55.

CASE 2.—This was a mild case in a male patient referred by Dr. McCaskey. This patient went to work within seventy-two hours after one treatment and was still at work and symptomatically cured a few weeks ago, though he still has a small goiter.

CASE 3.—*Patient.*—Mrs. Z., aged 48, married. Family history was negative. She had had typhoid twelve years ago; appendectomy and gall-bladder drainage two years ago. Menses came at 12, always irregular and painful. Patient came to the hospital on a cot on May 14, 1911, having been in bed two weeks. She complained of alternating constipation and diarrhea; pain and tenderness over whole abdomen especially the right half. She had a great deal of headache; was "short of breath" at times and had "dizzy spells"; was very nervous.

Examination.—The chest, abdomen and pelvis were negative, except for general abdominal tenderness. There was no rigidity. There was a perceptible bilobed goiter, larger on left; slight tremor. Examination of stools, urine and blood negative. The patient was kept in bed on light diet.

Treatment and Result.—After five days observation, during which time her pulse ranged from 68 to 84, the patient was given 5 grains of thyroid every four hours. After taking the thyroid for twenty-four hours her usual symptoms were exaggerated and in addition she complained of sleeplessness. The thyroid was continued, however, for six days when she complained of being "short of breath" and her pulse which was small and irregular, ran from 85 to 115. The thyroid was now stopped. Two days later the patient was feeling better and sat up for a few hours. While up her pulse was 108 and rather weak. Thyroidectin was given with negative results for three days, when her goiter was injected with 50 minims of boiling water. There was no reaction but she was kept in bed a few hours after the injection. Five days after the injection she was discharged. Dr. Drayer later reported her much improved and on July 12, forty-two days after the injection, she came to my office. The thyroid could not be seen, save on close observation; the pulse was regular, good volume, 80 per minute. There was no tremor. The patient said that she was attending to many of her duties and was much better in every way, though she felt the need of a little rest on the sofa almost every day.

CASE 4.—*Patient.*—J. H., female, aged 27, single. Family and previous personal history unimportant. Her normal weight was 142 pounds. When I first saw her, she weighed 89 pounds and presented all the symptoms of exophthalmic goiter in the most aggravated form it has ever been my privilege to see, including exophthalmos, tachycardia, shortness of breath, trembling, diarrhea, nausea, insomnia and loss of appetite. She was in a reclining chair when this examination was made. The pulse was irregular and weak, from 160 to 180 per minute. She was admitted to Hope Hospital July 27, 1910.

History.—The following notes are taken from the records made at the hospital: The patient has been aware of an enlarged thyroid for five months, and has been aware for that time that she had exophthalmic goiter. For two years, however, she has been losing weight and during this period has suffered from severe headaches. The eyes have been prominent for

four months. The patient has been under treatment for two months and for the past week has been taking thyroidectin; has not menstruated for six weeks. Examination after several hours in bed disclosed, in addition to the above, a dilated heart, a large firm thyroid with a pronounced thrill especially in lateral lobes. Neck measurement 15⅛ inches. Marked exophthalmos; eyes remain partially open during sleep, and cannot be closed entirely without strong effort. Urine normal. Small irregular dicrotic pulse 146 per minute, systolic pressure 180, diastolic 155. Temperature 99 3/5 F. Abdominal examination negative.

Treatment and Result.—The patient was given no treatment except injections of boiling water into the thyroid and rest in bed. For a few days only her diet was restricted on account of the diarrhea and nausea; after this she was fed liberally, including meats.

After the first two or three injections she was allowed to read in bed and do fancy work, and later to sit up, have visitors, have tub baths and visit other patients in the hospital whom she knew.

After the first two or three injections improvement was noted in her appetite, she slept better, was less nervous, breathed better, digestion seemed perfect and she no longer complained of palpitation. The pulse gradually improved in quality but did not diminish much in frequency. The thrill

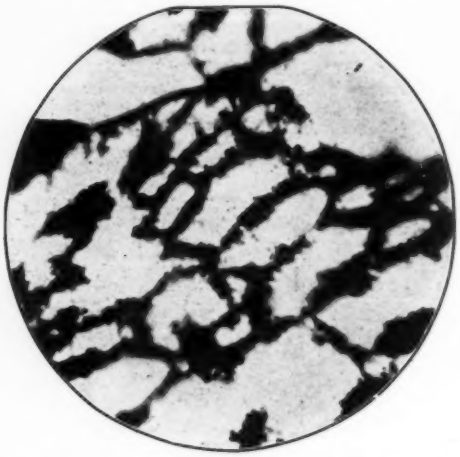

Fig. 3.—Section from gland of J. H., showing cytolysis. ×265.

Fig. 4.—Same as Figure 3. ×55.

in the thyroid largely disappeared and there was some improvement in the exophthalmos. As she improved, she was given more liberty as to exercise, and was finally allowed to go home on Dec. 21, 1910, for the holidays, where she remained until Feb. 21, 1911. During her stay at home she took moderate exercise each day, went shopping and enjoyed the festivities of the season in a moderate way. Of course, on account of the condition of the heart, she was enjoined against exertion. She was weighed ten days after the third injection, when it was found she had gained four pounds. This gain in weight continued. When she left for the holiday vacation she weighed 120 pounds, and during her vacation she continued to improve notwithstanding the increased amount of exercise and excitement. She came back to the hospital Feb. 21, 1911, was given two more injections and discharged seventeen days later, weighing 145 pounds and expressing herself as "feeling fine." Dr. E. J. McOscar, who had seen the patient a number of times, was present at the last injection and remarked at the improvement, including the exophthalmos. I regret that I did not have photographs taken before the injections were begun, after they were stopped, and after the thyroidectomy to show the condition of the eyes and neck at these various stages of the treatment, but I hesitated to ask a sensitive girl for this privilege.

Notwithstanding her increase in weight, her neck had diminished in circumference 0.5 inch. She menstruated normally on March 10, 1911, which was the first menstrual flow she had had since June, 1910—nine months. She has menstruated regularly since.

In all, this patient had injected into her goiter 1,525 minims (a little more than 3⅛ ounces) of boiling water. There were nine seances, and at each seance from one to three injections were given. The largest amount injected at one point was 160 minims and the smallest 80 minims. The largest amount injected at one seance was 370 minims. After each injection, the patient was asked to remain perfectly quiet in bed for three or four hours. Inasmuch as the other patients whose goiters I had injected, before this patient was injected, had complained but little of the pain, the first injection was made in this case without any anesthesia of any kind. The patient complained quite loudly of the hot needle in the skin, and thereafter this was overcome by Schleich's infiltration-anesthesia at the points where the needle was to be thrust through the skin. No attempt was made to anesthetize anything but the skin because the heat is complained of only in the skin, and for the further reason that I believe that the infiltration of the gland tissue would diminish the effectiveness of the injection of hot water, or perhaps defeat its purpose entirely. After the use of the Schleich, the only complaint made was a feeling of distention which at times caused pain to radiate to the back of the head and neck. The excitement produced by the anticipation of the treatment, together with the pain, caused some acceleration of the pulse, and for a few hours after the treatment there was noted a rise in the temperature varying from ½ to 2 degrees F.

A minute eschar was produced at the site of each needle puncture but no permanent scar was produced. After each treatment the needle punctures were covered by pledgets of cotton saturated with alcohol and over these an ice-bag was placed for an hour or so after the patient was put to bed. When the patient was discharged, she still had pronounced exophthalmos, a good-sized goiter, a dilated heart and rapid pulse. The pulse counted for a week, at the time of her discharge, and averaged with a like count taken when she first entered the hospital and while she was at absolute and constant rest, showed a rate of 123 per minute in both counts. However, the count taken first represents the pulse while she was living a more or less active life as indicated by the foregoing report. Moreover, the pulse when discharged was regular, of better quality and no longer "went crazy" on the slightest excitement or movement as was the case when the patient began treatment.

I explained to the patient that I regarded her as cured in so far as a cure was possible, except that the tumor could be removed, inasmuch as I regarded the heart and eye conditions as manifestations of permanent tissue changes. She was told,

however, that she could have a thyroidectomy done with very little risk, in case she wanted to get rid of the deformity.

She concluded to rid herself of her "big neck" and for that purpose reentered the hospital May 14, 1911, and a thyroidectomy was done under ether anesthesia two days later. There was nothing worthy of note in the operation, save that there were numerous dense adhesions between the capsule and overlying fascia, due no doubt to the injections of hot water. The convalescence was uninterrupted until the end of the fourth day, when the patient began to develop a left hemiplegia, which became complete by the sixth day after the operation. She left the hospital thirty-six days after the operation with the wound healed, save a small point of granulation at the place of exit of the drains, able to walk and use the hand and arm, and with no trace of facial paralysis, though the arm and leg had not yet recovered entirely. Her breathing at this time was better from relief of pressure on the trachea. The exophthalmos and heart remained the same except that the action of the latter was improved as indicated by the improvement in the pulse, which was of fairly good quality and 100 per minute while sitting. The blood-pressure taken three days after the operation was 150 mm. maximum systolic, and 125 mm. maximum diastolic—a diminution in both diastolic and systolic pressure of 30 mm. as compared with the pressure before any treatment was instituted. Owing to an error or misunderstanding the blood-pressure was not recorded when the injection treatment was stopped.

I visited the patient at her home June 30, six weeks after the thyroidectomy, and found her much improved so far as the paralysis is concerned. There was also quite a little improvement in the heart's action and the exophthalmos. Pulse, sitting, 96 per minute.

I was mistaken in my opinion that the thyroidectomy would do her little or no good save to rid her of her deformity. She still had, after the injections, some overactive thyroid tissue which was removed at the operation. This is proved by the clinical symptoms and also by microscopic appearance of the removed gland.

The prevailing picture, from a number of sections made for me by Dr. Rhamy, the pathologist of Hope Hospital, is one of connective tissue proliferation with compression of the gland structure. With the high power some of the fields are almost entirely occupied by connective tissue (Figs. 1 and 2). Here and there, however, is found pronounced cytolysis which is present usually in the severest forms of Graves' disease (Figs. 3 and 4). Rarely may be found a field in which a few follicles present filled with unstained colloid and in which there is some epithelial proliferation indicating a hyperactive gland (Figs. 5 and 6).

An extremely interesting incident in Case 4 was the hemiplegia which, it will be recalled, came on gradually and became manifest first at the end of the fourth day after thyroidectomy. I have communicated with a number of surgeons with large experience in goiter work and none of them report a similar accident, nor can I find a like case in the literature. I am of the opinion that the hemiplegia was the result of cerebral hemorrhage due to arterial degeneration produced by the prolonged thyroid intoxication. In this opinion I am supported by Drs. G. W. McCaskey, A. J. Ochsner, G. W. Crile and C. H. Mayo, to whom I submitted a report of the case. It should be stated here that there could be found in the case no evidence of specific infection either inherited or acquired. In all I have injected boiling water into hyperactive goiters twenty-nine times, in four patients. From 40 to 160 minims were injected at each point. From one to three points were injected at each sitting. The largest amount injected at one sitting was 370 minims. Marked improvement promptly followed the injections in every case. No untoward results followed the injections in any case. As stated in the earlier part of this paper, the evidence thus far accumulated concerning this method of treating hyperthyroidism is not sufficient to base definite conclusions on, but it seems sufficient to warrant a more extended trial.

To me this treatment seems especially adapted to the very mild and the very severe cases. The mild cases, it seems, may be promptly cured and the severe ones, if not cured, rendered safe operative risks. It may be well to say that the injections must be made within the capsule, avoiding the immediate vicinity of the parathyroids and recurrent laryngeal nerves, and with the same general precautions that govern the boiling water treatment of angiomata.

207 West Wayne Street.

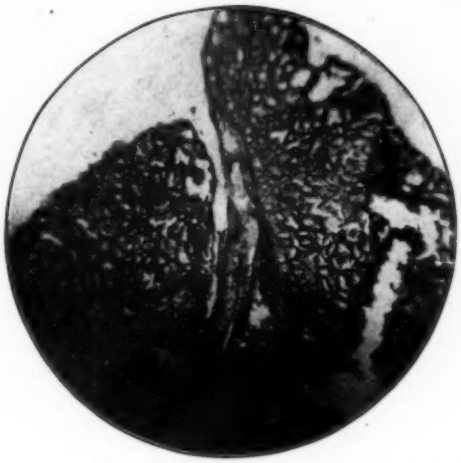

Fig. 5.—Gland of J. H., showing some hyperactive tissue after the injections of boiling water. ×55.

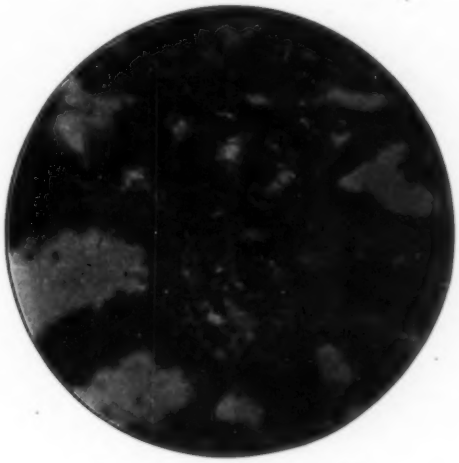

Fig. 6.—Same as Figure 5. ×265.

Long and Short Incisions.—Be not proud of an extremely short incision. A longer one, in reason, will heal as quickly, to an hour. Daylight is safer than fumbling in the dark.—Robert H. M. Dawbarn, in *Medical Record.*

ACCESSORY OR ABERRANT PANCREAS, WITH REPORT OF A CASE

BENJAMIN BROOKS FINKELSTONE, M.D.
BRIDGEPORT, CONN.

While an accessory pancreas is not very rare, still it is unusual enough to warrant the report of another case. This case, like Opie's, is an accessory pancreas entirely separated from the normal pancreas and adherent to the intestine, with numerous branches of the duct of Wirsung through the section, and it is, of course, natural to conclude that the main duct must have eventually opened into the intestine.

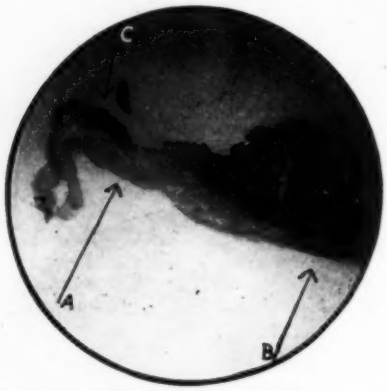

Fig. 1.—Relation of pancreas to the intestine. A, peritoneal surface of small intestine; B, aberrant pancreas inclosed by a slight capsule of connective tissue; C, mucous membrane of small intestine. Low-power lens.

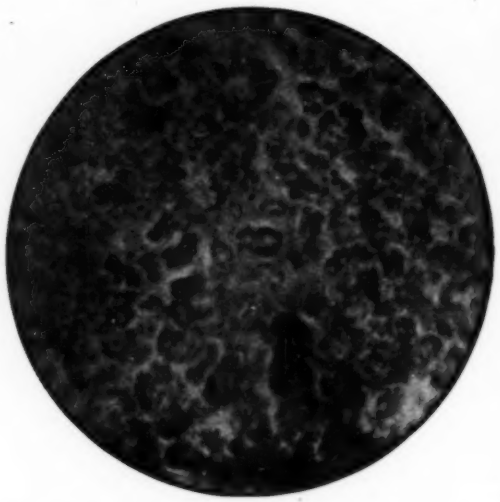

Fig. 3.—Same as Figure 2. High-power lens. Shows cellular structure of the organ.

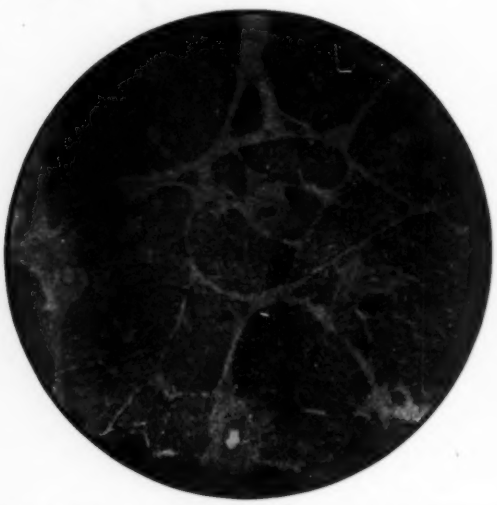

Fig. 2.—A section of pancreas showing general lobular arrangement of the organ.

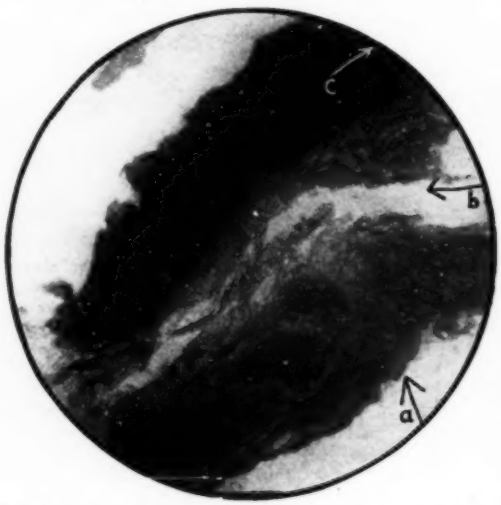

Fig. 4.—Section of intestine attached to the tumor; a, peritoneal surface of small intestine, showing longitudinal and circular muscular coats of intestine beneath; b, submucous coat with its blood-vessels and lymphatics; c, mucous membrane of small intestine.

Among the other cases reported are those of Klob, who demonstrated and cited two examples, viz., one embedded in the wall of the stomach, while in the other case it occupied the wall of the jejunum. Zenker collected six examples in which in every case the tumor had a duct entering the intestine through overlying mucosa. One was 16 cm., another 48 cm. One of Zenker's cases of special interest was an aberrant pancreas with a finger-shaped diverticulum of 5.5 cm. length, 44 cm. from the ileocecal valve. In these cases the coats of the accessory pancreas varied; i. e., microscopic examination showed tissue resembling pancreas, save that the interlobular tissue was frequently more abundant. Zenker diagnosed these tumors as embryonic rudiments. Luttille, in 200 autopsies, found five cases of aberrant pancreas. Wright described one example of the anomaly in which the tissue contained glandular tissue as well as islands of Langerhans. Hilly suggests that part of the primitive growth is separated from the remainder and later acquires an independent duct. In the *Index Medicus* of 1910, report of only one case was found—Nazari's case of aberrant pancreas in Meckel's diverticulum.

REPORT OF CASE

History.—A well-developed, robust-looking Italian, male, aged 34, was brought into the hospital with a penetrating bullet wound of the abdomen. At autopsy all organs were found normal except the peritoneum, which showed extensive peritonitis. The intestines were matted together owing to the same condition. In the intestine 75 cm. from the pylorus two perforations were found, i. e., wound of entrance and wound of exit. About 15 cm. from the sigmoid flexure in the descending colon another perforation was seen. About 30 cm. from the pylorus a flat tumor mass was found in the intestinal wall, on its free border, opposite the mesentery. It was yellowish-gray, about the size of a quarter, markedly defined from the surrounding tissue, and slightly protruding into the lumen of the bowel. The tumor and part of the intestine for about 7 cm. on each side of it were removed and sent to the College of Physicians and Surgeons, Baltimore, for microscopic examination. Dr. William Royal Stokes reported the tumor to be an accessory pancreas, or, as some may call it, "aberrant or supernumerary pancreas." On section the organ had the same yellowish gray color as the pancreas. Sections of it showed that it was enclosed on one side by peritoneum and some muscular tissue, and on the other side by the submucous coat and the mucous membrane.

Dr. H. W. Stoner made the photomicrographs here shown (Figs. 1-4).

To the embryologist, physiologist, and pathologist this condition must surely be of some interest as to its correlation with the true pancreas in health and disease. Interesting queries can be evolved from such an anomaly, as, for instance, whether the presence of such a tumor could prevent diabetes in a patient in whom the islands of Langerhans of the true pancreas were affected. Or whether in a diseased condition of the pancreas, would the accessory pancreas undergo sympathetic degenerative changes or hypertrophy and take up the function of the true pancreas?

38 High Street.

A PLASTER SUPPORT FOR GASTROPTOSIS

S. D. DICE, M.D.
SARANAC LAKE, N. Y.

I have employed for some time with good results, a useful method of securing abdominal support, with zinc oxid adhesive plaster on moleskin. It is adapted to cases of gastroptosis and enteroptosis requiring some mechanical support in the various wasting diseases, especially chronic tuberculosis, in which digestive disturbances are so common and so important to correct.

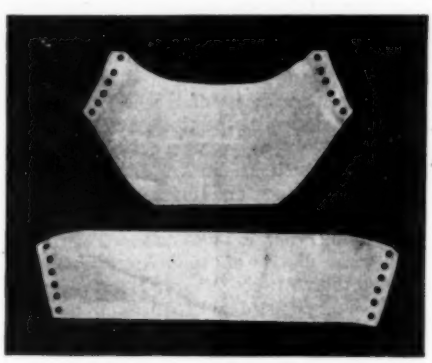

Fig. 1.—Pattern for plaster support for gastroptosis.

A patient in bed will often experience relief and benefit from the constant wearing of a light plaster support of the abdomen, although it is generally assumed, on theoretical grounds, that the sagging viscera require no support at such times. Elastic belts for abdominal support are often not comfortable or effective in the lean individual with a flat abdomen, even with an extra pad inserted under the belt, and holes cut in the elastic to ease up the pressure over the bony prominences at the sides. The plan herewith presented consists of a plaster pattern, with eyelets at the sides for lacing, as now generally used in surgical dressings, when it is desired to avoid a change of plaster at each dressing.

Fig. 2.—Plaster support applied.

The shape and size of the plaster apron will vary, of course, with each individual. The general outline is shown in Figure 1.

The plaster should extend from the umbilicus to the symphysis pubis, and in order to include the side tongues in the same piece with the apron, the 7-inch wide plaster will be necessary. (Fig. 2.)

The strap for the back should be 3½ inches wide, cut straight, or slightly curved toward the ends; the length must be about 3 inches shorter than the actual measurement, leaving the space of 1½ inches on each side, for the uplift traction on apron ends and lacing. (Fig. 2.)

The edge of the plaster along which the holes are punched for eyelets should be faced underneath with an extra narrow plaster strip, so as to make a double thickness to give the eyelets a better staying grip. Less traction on the plaster will be required, when it is laced up, if the patient assumes the recumbent position, which will relax the abdominal muscles and allow the viscera to lie in a more natural position.

The advantages claimed for this pattern and lacing are evident:

1. Quick relief is afforded by unlacing, when the abdomen distends with gas.

2. The single thickness of plaster over the abdomen obviates the necessity for an overlapped edge which often causes a sore ridge on the skin, in the methods requiring a three- or four-piece pattern.

3. There is a small economy of plaster over other methods.

4. It permits easy removal for a tub bath, and a reapplication of the same plaster by the patient, provided (a) that the skin is cleansed of bits of adhesive residue, with turpentine, which should be used before wetting the skin, and removed at once with soap and hot water to avoid irritation; and (b) that the abdomen is shaved clean of new hair growth after every bath.

When the plaster is reapplied to the skin, if it does not adhere readily with the aid of a hot-water bag over the abdomen, then a strip of fresh plaster may be strapped across the lower abdomen temporarily (as shown in Fig. 2 on the left) allowing one-half to lap over lower edge of apron, the other half to extend lower on the skin. After fixation is assured, this temporary strip may be taken off.

The insertion of the eyelets at the sides will be found convenient when the abdomen has been strapped with plaster according to Dr. Rose's method or any other.

104 Park Avenue.

A TABLE FOR EYE, EAR, NOSE AND THROAT WORK

L. W. DEAN, M.D.
IOWA CITY, IA.

This table was designed with the view of securing one that would serve equally well for a cataract operation, brain surgery, mastoid operations, throat work, laryngotomy or bronchoscopy. The table has now been in use for one year and has filled the requirements for this work. The table can be raised to a height of 41 inches and lowered to 31 inches. This allows the operator to work standing or sitting. The table may be tilted to any desired position. This can be done very rapidly if difficulty with anesthesia or other conditions indicate the need for a change of position.

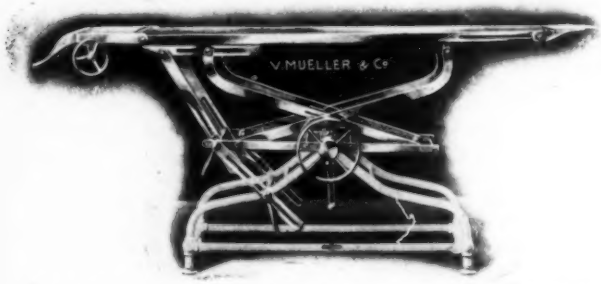

Fig. 1.—A table for eye, ear, nose and throat work, shown with the top of table horizontal.

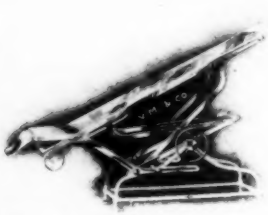

Fig. 2.—View of table with head lowered.

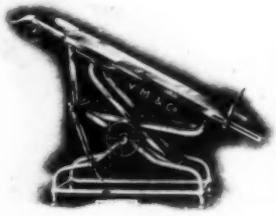

Fig. 3.—View of table with head elevated.

The head-piece of the table may be elevated to any desired position. This advantage, together with the tilting of the table, greatly diminishes the work in bronchoscopy and laryngectomy. In bronchoscopy it is not necessary to have an exceedingly well-trained assistant to hold the head.

The table is firm in every position and there is but slight opportunity for wear.

MITRAL STENOSIS OF TRAUMATIC ORIGIN *

DAVID RIESMAN, M.D.
PHILADELPHIA

History.—N. H., an able-bodied married man of thirty-five, a musician by profession, was returning from a playing engagement one morning at 4 o'clock in the month of August, 1910. Suddenly, when about three squares from home he was set on by foot-pads. Terror-stricken, he ran as fast as his legs would carry him, grasping tightly in one hand his violin and in the other a heavy box containing his music. He arrived at his home utterly spent and exhausted, and with an intense feeling of choking and suffocation. For half an hour he had to stand up and struggle for breath. Gradually the sense of suffocation lessened, its place being taken by a distressing palpitation. There was no real pain. Later in the day the patient consulted a physician, who told him there was nothing serious the matter with him, and that he would soon be well again. By the following day, the palpitation had ceased. Two or three months later it returned, and has troubled the patient intermittently ever since. It caused him to consult me March 21, 1911.

Examination.—I found a presystolic thrill in the apex region, a loud churning presystolic mitral murmur, accentuation of the second pulmonic sound, and, on a later examination, a doubling of the second sound at the base of the heart.

The man's history is entirely negative; aside from an attack of lumbago some years ago, he remembers no illness whatsoever. His mother died at 55 years of age, of a cause unknown to him. His father is still living. Prior to the episode that I have related, he was in every sense, so far as he knew, sound and well.

How shall we interpret this case? I am well aware of the difficulty of proving a given case of heart disease to be the result of trauma. A cursory glance over the literature is not particularly informing, except that it leaves little room for doubt as to the fact that injury and strain can produce functional and muscular disease of the heart. With respect to endocardial, particularly valvular, lesions, the testimony is more questionable. In accidents such as crushes or severe contusions, hemorrhages and tears have been found in the valvular and mural endocardium. Bernstein,[1] who, in 1896, collected all the cases of heart disease of traumatic origin recorded—a total of one hundred and twenty-four—found only a few instances of involvement of the valves; none of which corresponds to the case here reported. There are in his list a few cases of mitral stenosis that followed and seemed to be due to violent blows, falls or contusions. A few additional examples are found in Richard Stern's valuable monograph, "Die traumatische Entstehung innerer Krankheiten." Külbs,[2]

* Read before the Section in Medicine of the College of Physicians of Philadelphia, May 22, 1911.

1. Ztschr. f. klin. Med., 1896, xxix, 519.
2. Verhandl. d. deutsch. path. Gesellsch., 1908, xii, 172.

in a series of cruel and quite unnecessary experiments, succeeded in producing traumatic valvular lesions in dogs—in seventeen out of twenty-three cases. These lesions consisted chiefly in hemorrhages into the tissues of the valve and the adjacent endocardium, with intimations of a reactive inflammation at the margin of the extravasations.

A small number of instances of rupture of valves following violent strain are on record, but it seems that the majority are cases in which the valves had been previously diseased. For reasons easily understood, the aortic valve is in such instances the one usually affected.

In the case I have reported it might be said that the man had had an old endocarditis, and that the violent strain did nothing more than render a diseased but competent heart slightly insufficient. I am aware of the fact that mitral stenosis is the one valvular lesion in which the antecedent history most often defaults. In probably 30 or 40 per cent. of the cases, no cause whatever can be found. In my experience, however, this is true chiefly in the female sex. Indeed, mitral stenosis is very much like chlorosis a disease of young women. In the mitral stenosis of the male sex it is much more common to find a definite etiologic factor in the history.

I believe that the endocardial lesion in my case was the direct consequence of the violent strain on the heart caused by the man's running, heavily laden and at utmost speed, from his pursuers. As to the primary lesion, it was either a rupture of one of the more important chordæ tendineæ or, what is more likely, a hemorrhage into the valvular tissues, with subsequent organization and contraction.

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MALTA FEVER IN TEXAS

A REPORT ON THE SERUM REACTION OF ONE HUNDRED TWENTY-EIGHT GOATS IN EDWARDS COUNTY FOURTH PAPER

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In our last communication,[1] we reported a series of agglutination tests on twenty-three goats, eight of which gave a positive reaction with the *Micrococcus melitensis*. In this paper also we reported seven additional cases of Malta fever, three of which had occurred in the Nueces River cañon, in Edwards County, the principal goat raising section of the state. In this county there are approximately 175,000 goats, the individual herds ranging from 500 to 6,000 goats each. These herds consist almost entirely of finely bred Angora goats and are raised for the mohair which they produce. A few Spanish and Maltese goats are still to be found in each herd. The pure bred Angoras were first imported in 1867 from Asia Minor, by Harris. The more recent importations have been almost exclusively from South Africa.

In view of the fact that the disease has been prevalent in this county for many years, especially in the Nueces River cañon, it was thought desirable to make some examination of the goats in that section. The large size of the herds made a thorough examination of each herd impracticable and therefore a certain number of goats were taken from the several herds available. Only female goats were examined, in order to secure milk specimens, but at this season of the year, even if goats were specially selected, very little milk could be secured.

A blood-specimen was obtained in a Wright's capsule from the ear of each goat for the specific agglutination test with *M. melitensis*, all tests being controlled with serum from normal goats. Wherever obtainable, milk specimens were taken from those goats giving a positive agglutination test, centrifugalized and the sediment plated out on glucose-nutrose-litmus-agar plates, in the hope of isolating the organism from the milk.

The following results were secured from the examination of 128 goats in the vicinity of Barksdale, Texas

Herd 1.—About 1,500 goats in herd; 80 goats were examined and 16 gave a positive test with the *M. melitensis* at a dilution of 1 in 20, one giving an agglutination at 1 in 40 in thirty minutes.

Herd 2.—About 500 goats in herd; 12 goats examined; 3 gave good clumping at 1 in 10 dilution, one going also to 1 in 20 in thirty minutes.

Herd 3.—About 1,500 goats in herd; 13 goats examined; 2 gave strong reaction with *M. melitensis* at 1 in 20 dilution in thirty minutes.

Herd 4.—About 1,000 goats in herd; 23 goats examined; 4 gave positive agglutination with *M. melitensis* at 1 in 20 dilution, one going also to 1 in 40 in thirty minutes.

Thus twenty-five out of a total of 128 goats examined (19.4 per cent.) gave a positive agglutination test for *M. melitensis*. Only eight of these had milk and they only in small quantity. Specimens of milk plated out on glucose-nutrose-litmus-agar gave a negative result for *M. melitensis* in each instance.

SUMMARY OF WORK ON MALTA FEVER IN TEXAS

In concluding this series of investigations on the subject of Malta fever in Texas, we have, by blood cultures and agglutinations, established the fact that the disease exists endemically in the goat raising sections of Texas.

We believe that the infecting organism, the *M. melitensis*, is present in the goats of this section, this conclusion being based on the following observation:

1. About 20 per cent. of all goats examined (151) have given a positive agglutination test at 1 in 20 dilution, three going also to 1 in 40 in thirty minutes.

2. All cases reported by us gave a history of association with the goat raising industry and six gave a history of drinking goat milk.

3. A large number of these goats are direct descendants of goats imported from Asia Minor and South Africa where the disease has been proved to exist in goats.[3]

While many of the patients give a history of drinking goat milk, the factor of dust infection must be considered, particularly in the Nueces River cañon, where goat milk is rarely used, but where the houses are surrounded by the dusty bedding-grounds of the goats and the disease is not infrequent. At this time of year (September) conditions are unfavorable for the isolation of *M. melitensis* from goats' milk, and we believe a statistical study of Malta fever in Texas in man and goats, to be of value, should be made in the months of March, April, May and June. This period embraces the kidding season and the time when the goats are in full milk. After this time the goats rapidly become dry. The great majority of cases of Malta fever among the ranchmen are contracted also during this season, when the whole family practically lives with the goat herds, caring for the kids and teaching them to suckle.

1. THE JOURNAL A. M. A., Sept. 23, 1911, page 1045.

3. Strachan, P. D.: Undulant Fever in South Africa, Jour. Roy. Army Med. Corps, July, 1907, ix, 83. Also Strachan, P. D., and Birt, C.: Malta Fever in South Africa, Jour. Roy. Army Med. Corps, August, 1909, xiii, 153.

CONTROLLING HYDROPHOBIA IN THE HUMAN SUBJECT*

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In considering methods of preventing hydrophobia in man there are certain factors in the rationale of the disease which must be constantly borne in mind. The following are some of the most important of these:

1. Although all mammals are susceptible to rabies, it is perpetuated in nature almost exclusively by the domestic dog, but also to a small extent and in a few localities by wild animals of the dog family and by skunks.

2. Human infection occurs, in the vast preponderance of cases, directly from the rabid dog through bites, and in the remaining minority of cases from animals which in turn have received their infection from dogs.

3. Rabies is an infectious disease, transmissible by bites from infected to healthy animals, and by other methods of inoculation with the specific virus. It never originates spontaneously or as a result of starvation, bad food or water, excitement, fear, or other like causes.

4. Statistics from the most diverse parts of the world show that rabies is not confined to, and not even markedly prevalent during, any particular season of the year. It may flourish at any season.

5. All parts of the world are potentially capable of harboring rabies. Climatic influences do not operate to its extinction.

6. Under the present conditions of communication in the United States, physical barriers are insufficient to prevent the introduction of rabies into any state or territory.

7. Animals may be suffering from rabies, and their saliva may be virulent for some days, before symptoms become sufficiently marked to excite notice.

8. Dogs suffering from furious rabies often have a tendency to run long distances, twenty-five miles or more being reported, often inoculating large numbers of other animals and persons *en route*, and carrying infection into previously rabies-free regions.

9. Animals killed early in the course of rabies may fail to show unmistakable evidence of the disease on microscopic examination, and in this manner the diagnosis may be indefinitely delayed pending the result of inoculation tests.

10. By means of the Pasteur treatment, promptly administered, immunity may be induced in exposed persons to the extent that a mortality of no more than 1 per cent. need be expected from rabid dog bites of the average severity.

Measures based on these premises and designed to prevent rabies in man may be considered under two headings: (A) those directed against the disease in animals; (B) those which provide for the administration of the Pasteur treatment to exposed persons.

A. *MEASURES AGAINST THE DISEASE IN ANIMALS*

Since the dog is the perpetuator of rabies, eradicative measures must apply first to rabies in dogs. When wild animals perpetuate the disease in a given locality, measures such as are commonly taken against noxious wild animals must be enforced.

Since any section of the country, at any season of the year is potentially capable of harboring rabies, if it be introduced, there are certain measures which should be in operation everywhere and at all seasons of the year. The object of these measures is to reduce the total dog population by eliminating the ownerless uncared-for element and to restrict it to animals owned by masters who have a sense of the value of their animals and of the responsibility of their ownership, and an intelligent interest in their welfare.

I. PERMANENT MEASURES

1. Destruction of ownerless dogs. This implies in cities the maintenance of an official dog-catching force and a pound for the detention and humane destruction of dogs, cats and other animals. In certain rural districts it is feasible to destroy the animals immediately by shooting.

2. Legal definition of an ownerless dog as one not provided with a license tag of the current license period.

3. Imposition of a license fee on all dogs which are owned, harbored or cared for by any person, and a license tag issued to be worn by the dog. This tag bears a serial number corresponding to the entry in the official register, which contains the name and address of the owner and a description of the dog. The license fee should be sufficiently large to accomplish a reduction of the number of dogs kept, to impress a sense of value, and should be higher for unspayed females.

4. Rendering dog owners legally responsible for damage inflicted by their dogs. In many sections there seems to be no redress for such damage save such as is obtained by protracted legal action. A stray horse peacefully grazing by the roadside would be promptly taken to the pound and held for fines, while there would be no penalty for allowing a dog to run loose annoying or injuring stock and poultry and possibly contracting and transmitting rabies.

5. Education of the dog-owning public in matters relating to the care of dogs as affecting the spread of communicable diseases, especially rabies. This measure is believed to be the most important adjunct or preliminary to the other measures, without which it will be impossible to effect any lasting benefit. The media through which it may be effected are: the press, both public and official; lectures, talks and demonstrations by representatives of the health and veterinary boards; object-lessons in the course of epizootics; the public schools and possibly the pulpit. There is evidence that the average layman does not profit by bulletins and tracts to the desired extent unless he finds them practically and perenially useful, and above all, understandable. They arrive in the waste-basket without even a sojourn in the pigeonhole. For this reason it is urged that information intended to instruct in the methods of preventing rabies be administered in a palatable menstruum, a "Dog-Lover's Handbook" with illustrations, for instance. There should be chapters on the preferred and valuable breeds of dogs, on food and housing, how to build a kennel, what to do for a sick dog when a veterinarian is not immediately available, etc.; but the truths should not be lost sight of, that the majority of dogs are luxuries rather than necessities; that a dog worth having is worth taking good care of; that it is to the personal interest of the dog-owner as well as his duty to avoid the spread of disease by his animals. The essential information concerning rabies should be dealt with in a separate chapter and at appropriate points throughout the bulletin.

6. The organization of a system of securing reliable information concerning the presence of rabies in all portions of the state or territory. The disease should be made reportable, as should also suspected cases, and penalties imposed for non-compliance.

7. State or territorial quarantine against importation of dogs. A measure obviously to be adopted only after a consideration of internal conditions and interstate relations.

II. SPECIAL AND TEMPORARY MEASURES

Under this caption are considered those measures which are to be applied with discrimination, *pro re nata*. They are best administered by a central authority free from local affiliations and prejudices, but well informed through its agents on local conditions. Their selection, duration and area of application are to be decided on after consideration of the specific case.

1. Muzzling.—This measure should be applied whenever an outbreak of rabies occurs, and maintained sufficiently long after the cessation of new cases to warrant a feeling of

* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

security that the outbreak has been eradicated and is not merely in abeyance. The only justification for short periods of muzzling is the uncertain one that they may be applied with less opposition and greater thoroughness. It would appear that the greater the area included in an ordinance, the less time it will be necessary to maintain it. Basing the necessary period for eradication on the possible incubation period in dogs, a minimum period of six months and a maximum of one year would be necessitated. The area in which an ordinance is operative should exceed that of the known extent of the outbreak in order to surround it with a safety zone. Muzzling ordinances for certain months or seasons of the year, when based on a supposed seasonal prevalence, are in the face of the facts, illogical. Ordinances should prescribe that muzzles be constructed of metal, should prevent biting, should be humane, and should be fitted to the animal.

2. Restraint of Dogs.—This measure may be employed as an alternative or as an adjuvant to muzzling. If well enforced it should be effectual in preventing the spread of infection, but it does not relieve the owner of an already infected dog from the danger of infection. It places the responsibility for an infection in the family or personnel of a household, on the owner of the dog, but does not remove the possibility of infection. Restraint means fastening up with a chain (not a rope), or confinement within an enclosure from which the animal cannot escape. Since it is the custom of unscrupulous persons to liberate their dogs for exercise after nightfall in violation of an ordinance of restraint, special provision against this infraction is necessary. The dogs may be exercised while muzzled, and preferably for their own protection led in leash. Leading in leash unmuzzled is so easy of evasion that it is not to be recommended. The period and area of restraint ordinances are governed by the same considerations as in the case of muzzling.

3. Disposition of Supposedly Infected Animals.—Animals which have been subjected to bites by other animals which have rabies or in which there is good ground for suspecting it should be immediately killed or quarantined. In the case of dogs and cats it is wisest that they be destroyed. Live stock and other animals of especial value may, at the discretion of the authorities, be subjected to isolation or quarantine under official supervision, for a period of not less than six months, the expenses being borne by the owner.

4. Disinfection.—The necessity for disinfection of objects soiled by the saliva and other discharges of rabid animals does not appear to be pressing, but since a possibility of danger from such objects is conceivable, and a chance of infection arising in this manner would bring great discredit on the authorities, it is advisable to provide for disinfection. This may be carried out by burning the litter of stables, kennels, etc., subjecting more valuable objects to the action of boiling water, steam or chemical disinfectants, and washing down walls and floors which may have been soiled with disinfectant solutions, or a fresh coat of whitewash. The commercial use of any part, including the hide, of an animal killed for rabies must be prohibited unless such parts have previously been rendered innocuous to the satisfaction of the authorities. Proper disposal of carcasses must be enjoined.

5. Compulsory Notification of New Cases of Rabies and Animals Bitten.—By the enforcement of this rule new foci of infection may early be recognized. When temporary measures are to be applied in a territory, the public must be informed through the newspapers, by special printed announcements, by verbal notification by a representative of the authorities, or by conspicuous posters. This notification should comprise a statement of the local prevalence of the disease and the danger to human and animal life involved, a statement of the exact area and time period of application, the provisions of the ordinance, a quotation of the authority and the penalties for non-compliance.

A supplementary note as to sources of information and as to the examination of suspected material would be in the direction of increased efficiency.

6. Local Quarantine.—The central office should have authority to impose a quarantine on infected towns, cities, counties, etc., making it illegal for any person to remove dogs or other animals capable of transmitting rabies from the infected district except under official certificate that they are free from rabies infection.

B. PASTEUR TREATMENT

There are now some twenty institutions in the United States where the virus for the Pasteur treatment or one of its modifications is prepared and administered. Some are under private management and others are under state or municipal auspices. The Public Health and Marine-Hospital Service through the Hygienic Laboratory, Washington, D. C., is prepared to furnish gratis on request, glycerinated virus to state health authorities having the necessary laboratory facilities.

Because of the saving of time and expense permitted by it, the treatment of patients at or near their homes is preferable to treatment at a central station which may be far distant. This has been made practicable by the use of glycerinated virus, which is sufficiently stable to permit of shipment by mail or express. It has been used in two forms; that of an emulsion containing glycerin as a preservative, and in the form of the cord itself cut into pieces suitable for a dose, and bottled in glycerin. The latter would appear to be the more stable form but necessitates emulsification under aseptic conditions at the place where it is used.

The preparation of the virus necessitates the services of a bacteriologist with special training and experience in connection with rabies, and such skilled or unskilled assistants as may be needed, according to the amount of work. The equipment consists of a plant for maintaining an adequate supply of rabbits, rooms for the preparation and administration of the virus, two incubators, an ice-chest or refrigerator, and various instruments, glassware, and chemicals. The examination of suspected material for diagnosis may conveniently be included in the duties of the director. The ethics of a state's supplying the virus to needy persons would appear to be the same as in the case of diphtheria antitoxin.

THE MECHANISM FOR CARRYING OUT THE FOREGOING MEASURES

Each state and territory should vest authority for the control of rabies in a central office. Such powers are now commonly entrusted to the state board of health or the state agricultural department or corresponding bodies, or divided as regards certain functions or districts (municipal or rural) between those agencies concerned with human health, and those pertaining to the welfare of domestic animals. The most effective work in the control of the disease will be secured from that agency which has or can develop the best organization of its personnel, and which has competent representatives in the greatest number of localities throughout the jurisdiction. The centralization of authority is necessary for the coordination of the work and the securing of uniformity. Otherwise certain delinquent communities will habitually harbor rabies, to the detriment and discouragement of the neighbors.

The functions of the central office will be as follows:

1. To collect information regarding the prevalence and distribution of rabies in the lower animals and in man.
2. To publish for public distribution information concerning rabies.
3. To investigate reported cases and epizooties.
4. To maintain permanent and apply temporary measures of control or to supervise the carrying out of these measures by local authorities.
5. To cooperate with corresponding authorities in contiguous states.

6. To provide a laboratory for the examination of suspected material.

7. To provide for the administration of preventive inoculations to exposed persons.

Each outbreak of rabies will naturally present peculiar features calling for the exercise of judgment as to the methods to be employed, but for the sake of illustration of the workings of the central office, a hypothetical outbreak will be assumed and described. It is assumed that a central office, say the state board of health, is responsible and authorized for the control of rabies, and that it has put in force the permanent measures previously described; that is, it has instructed the local health officers to report suspected cases, has attempted to reduce the ownerless dog population, has placed information concerning rabies at the disposal of the dog-owning public, and has enforced the license fee. Since conditions in large cities will be attended to by the municipal authorities under the supervision of the state authority, a rural outbreak will be supposed.

A health officer in a small town reports that a dog coming from a neighboring village has entered the town exhibiting the symptoms of rabies, has bitten other dogs and stock and several persons; that the dog has subsequently died and that the head of the animal is being sent for examination. The state office will subject the dog's head to laboratory examination, and in the event of a positive result, will order such temporary measures as in its judgment seem indicated, advising the bitten persons to take preventive inoculations and informing them how this may be arranged. It will also communicate with its representatives in the towns adjacent to the infection, and in case the outbreak is on or near the state line, with the corresponding office in the contiguous state. In case the local representative is obviously unable to cope with the situation as it develops, a special agent must be sent to take charge.

A plan which is giving promising results in at least one state where the control of rabies is entrusted to the veterinary authorities, includes the making of a temporary agent of the local veterinarian, with per diem compensation. This agent is charged with the duty of reporting on local conditions, and carrying out such measures as are prescribed. When necessary, a special agent is sent from headquarters to destroy stray unmuzzled dogs, which he accomplishes with great thoroughness with a shotgun. It is not unusual for communities to request voluntarily that this agent be sent to clean out the stray dogs from the town, even when there is no rabies present. Unfortunately quite the opposite attitude is to be expected in many parts of our country.

DIFFICULTIES AND CAUSES OF UNSUCCESS

Aside from inadequacies in the central administration arising from lack of legal authority, lack of funds, the pressure of more important duties, or even from indifference or incompetence, there are other obstacles which render the eradication of rabies a matter of great difficulty, and this in spite of the fact that the perpetuation of the disease is due to one isolated fact, namely, that dogs will bite, and that its prevention is in essence comprised in a single measure, the prevention of their biting. The mental attitude of the average dog-owner is the greatest obstacle to success. Ignorance is the chief factor determining this attitude, and it should be a special aim of the authorities to dispel this ignorance. A second factor is indolence or indifference, for which salutary stimulation is indicated. A third factor is personal interest of the dog-owner to comply with and support measures against rabies.

A second great obstacle has arisen from a lack of that uniformity and correlation in the methods employed in adjoining territories, which can only be secured by an impartial central authority for each state and by interstate cooperation. Thus, no matter how conscientiously and effectually one community may have dealt with its rabies problem, the constant reintroduction of infection from a dilatory neighbor is sure in the end to discourage and demoralize. In this connection it is instructive to recall that in England it was only after the antirabies operations were entrusted to a central authority that a permanent amelioration and finally complete eradication was effected.

ABSTRACT OF DISCUSSION

DR. CALVIN S. WHITE, Portland, Ore.: We have during the last year had rabies for the first time in the northwestern part of our state, where it is very sparsely settled and where the sheep industry is the only one. The sheep men cannot afford to destroy their dogs; and they tell me that the dog that is muzzled will not work. We have had it among the coyotes, and several that have been sent to our laboratory have shown the Negri bodies in large quantities. There have been only two cases that I know of in which human beings have been bitten, one by a coyote and the other by a dog; in both animals we were able to establish the presence of the Negri bodies; and we used Pasteur treatment on both the patients. How are we going to disinfect the saliva of a dog? The infection is in the whole of the animals that we examined; not only in the saliva but in the teeth and in the humors of the eye, and it seems to me it would be out of the question to do it. I would like, also, to know how a certificate could be given that a dog was free from rabies when we found that the period of incubation varied so before the disease developed. I don't see how any one's certificate could possibly be of any value, if the dog had ever been inoculated.

DR. NORMAN BRIDGE: I don't know any way except keeping the animals long enough in quarantine to be sure. I presume that would cover it.

A CASE OF ANGIOKERATOMA

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The article on angiokeratoma by Dr. Richard L. Sutton[1] suggests the report of the following case.

History.—Patient, P. M. K., a man aged 61, complains of slight ache of testicles. He has followed occupation of engineer previous to his admittance to hospital, and has always enjoyed excellent health. The cutaneous history of the family is negative. The patient's circulation has been good till recently when symptoms of heart involvement developed. There is a very vague history of chilblains. The patient was hit by a baseball in left testicle, twenty-six years ago, immediate swelling of testicle following, however, with very little discomfort at the time. Swelling has persisted since, fluctuating in size from time to time but unaccompanied with any noticeable symptoms except a slight ache. The superficial capillaries have been prominent for an indefinite period of time, the patient first noticing the skin lesion about two years ago. The tumors increased in numbers from time to time and the patient has noticed that a few of them have slowly disappeared.

Examination.—The patient is a well-built man, well nourished, 5 feet and 9 inches in height, and weighs 160 pounds. The skin on the hands and feet is smooth and unmarked and there are no lesions on the body. The superficial capillaries

1. Sutton, R. L.: THE JOURNAL, July 15, 1911, p. 189.

of the calf of the leg and lower portion of the abdomen show a tendency toward varicosity. Patient has some edema of the ankles. The scrotum is enlarged on the left side, a chronic hydrocele being present. The integument covering it is roughened and somewhat boggy to the touch. The superficial scrotal veins on left side are dilated and tortuous, and distributed along their course are a goodly number of hard, purplish, smooth, elevated nodules varying from the size of a grain of wheat to that of the head of a pin. On puncture of the larger ones a small drop of serous blood exudes. Some of the nodules are small and in process of development, while others are of a brownish red color and undergoing degeneration. The patient gives a history of chronic venous obstruction preceding the development of the angiokeratoma, the vascular tumors developing as a result of the increased blood-pressure in the superficial capillaries, the walls of which being insufficiently supported, allowing their formation. The chilblain history in this case being so vague, it, as the underlying cause of the vascular lesion may be ruled out.

"SINGER'S NODULE" (CHORDITIS NODOSA) REMOVED BY VOCAL TREATMENT

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While these nodes usually occur in singers and public speakers, the following case will show that habitual misuse of the voice by anyone may cause this condition.

While faulty breathing is a factor, the breathing of itself will not develop nodes, the prime factors being overtension of the intrinsic and extrinsic muscles of the larynx which causes the *coup de la glotte* or stroke of the glottis, which, Garcia used to say, is death to the voice.

Kyle says that nodes are usually located near the junction of the anterior and middle thirds of the cords. My experience has proved just the opposite and I generally expect to find them near the junction of the middle and posterior thirds, for the following reason:

When the voice is used properly and the upper register is attempted, the posterior thirds of the cords are closely approximated and not in use and the larynx rises to a higher position, the extrinsic muscles being relaxed. Now, when the pitch of the voice is raised and the larynx is held in the same position as when speaking or singing in the chest or medium register, there is overtension of the extrinsic muscles and the arytenoideus muscle, which causes the cords to vibrate throughout their entire length, and as the posterior thirds are closely approximated, the super-attrition which causes the nodes to develop occurs just a little anterior to this point.

The patient, Mrs. E. J., had not been able to speak above a whisper for six months and had been treated during that time by her family physician with no result. She finally became discouraged and was sent by a friend to Dr. Vansant of Philadelphia who referred her to me. On examining the larynx, I found a nodule on the free border of the left cord near the junction of the middle and posterior thirds. The patient said she had a relative living with her who was very deaf and that during the day she talked very loud to her, pitching her voice higher than usual, and in the evening her voice was always tired and the muscles of the larynx very much fatigued. This is exactly what happens when a singer uses the chest register in singing the higher tones, and the result in this case was the same. The voice gradually became hoarser until it could be used only with great difficulty and there was almost complete aphonia.

On examining the cords during tone-production, I found that when singing the four tones C, B, A and G below the staff, the node did not come in contact with the opposite cord. Taking the patient to the piano, I then instructed her how to speak on these four tones and instructed her how to breathe properly. She was told not to talk at all until she could do so by using only these tones as fundamentals, and, in the meantime, to practice the breathing exercises half a dozen times a day.

In four weeks she had a perfectly normal voice, although pitched considerably lower than formerly. The tired feeling in the throat was also gone because the patient had learned to use her voice in the different registers without keeping the larynx in a fixed position, thus relieving the extrinsic muscles of the heretofore constant strain.

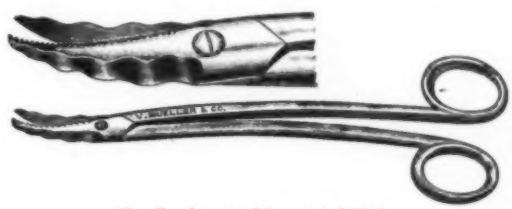
For the removal of the nodule, besides changing the faulty voice production and faulty breathing, external massage of the larynx was practiced and by the end of the third month the node had completely disappeared. For the accompanying hypertrophic laryngitis, inhalations of the compound tincture of benzoin and camphorated tincture of opium were used while the local application of a 2 per cent. solution of silver nitrate was made three times a week.

I wish to emphasize the fact that the main treatment of chorditis nodosa is teaching the patient to use the voice and respiratory apparatus properly. This appears to me a much more satisfactory method than operative measures, as, in the latter case, the node will probably reappear in time, while if the patient has learned to use the voice properly, the cause is removed and there is no danger of recurrence.

NEW TONSIL SCISSORS

WILLIAM S. WINDLE, M.S., M.D.
OSKALOOSA, IOWA

With a view to combining the good points of three instruments in one, for enucleating the faucial tonsil,



Tonsil scissors with serrated blade.

I have devised the scissors here illustrated. They present these features:

1. The cutting edge of one blade is serrated and the other smooth; this facilitates the cutting of soft, slippery tissue.

2. The outer edge of each blade is wave-like in outline and beveled to a dull knife edge; this serves as a dissector. By inserting the closed scissors between the tonsil and pillar and then opening them forcibly at four or five points, the tonsil is rapidly exposed and prepared for the snare. The latter may be omitted and the operation completed with the scissors if desirable.

3. The closed scissors may be used as an Allport's or Swan's wave-edge knife for enucleating the tonsil.

Sanitation and the Hookworm.—As Boycott has clearly pointed out, three conditions are necessary for the spread of hookworm disease: (1) a certain degree of temperature, about 68 to 90 F.; (2) a certain degree of moisture; (3) fecal contamination of the ground; and these conditions are found only in tropical and subtropical regions. When the temperature here is suitable for the hatching out and development of the embryo hookworm, the weather is usually too dry; and while the sanitary arrangements, especially in the country districts of New York state, are probably not ideal, they are not to be classed with those in the tropics.—Nichols in *Medical Record*.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

ADALIN.—Adalin, $C(C_2H_5)_2Br.CONH.CONH_2 = C_7H_{11}O_2N_2Br$, is brom-diethyl-acetylcarbamide.

It is prepared by the action on urea of brom-diethyl-acetyl bromide, obtained by the action of bromine on diethylacetic acid anhydride.

Adalin is an almost colorless and odorless crystalline powder, with a melting point of 116° C. (240.8° F.), which dissolves readily in alcohol as well as in the other ordinary organic solvents. It is difficultly soluble in water.

Actions and Uses.—Adalin is said to be an efficient and prompt sedative, reducing excitement and promoting sleep in conditions in which a powerful hypnotic is not required. In therapeutic doses it is said not to exert any unfavorable influence on the respiration or heart action. The sleep produced is said to be restful, dreamless and exceptionally free from unpleasant by-effects and sequelæ.

Adalin is said to be useful as a sedative and mild hypnotic in neurasthenia, hysteria, cardiac neuroses with tachycardia, chorea, mental disorders with moderate excitement, and insomnia due to various internal diseases, etc.

Dosage.—As a sedative 0.3 to 0.6 Gm. (5 to 10 grains), given in cold water, repeated three or four times daily if necessary; as an hypnotic 0.6 to 1.0 Gm. (10 to 15 grains), followed by a drink of hot, sweetened water or weak tea.

Manufactured by the Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany (Farbenfabriken of Elberfeld Co., New York). U. S. patent No. 983,425 (Feb. 7, 1911; expires 1925). U. S. trademark No. 81,136.

Adalin Tablets, 5 grains.—Each tablet contains adalin 0.33 Gm. (5 grains).

BULGARA TABLETS.—Tablets containing a practically pure culture of bacillus bulgaricus.

Bulgara Tablets consist of the slowly dried cultures mixed with milk sugar and starch, each tablet weighing 5 grains and containing a sufficient number of virile organisms to effect the souring of a pint of sterile milk in less than 20 hours.

Actions and Uses.—The bacilli contained in bulgara tablets give rise to the production of considerable quantities of lactic acid which tends to restrain the growth of putrefactive organisms. They are said to be useful in diseases of the alimentary tract and in such general diseases as are believed to depend on putrefaction in the intestines.

Dosage.—One or two tablets before or after meals. The diet should contain a sufficiency of sugar.

Bulgara Tablets are marketed in tubes, each containing fifty tablets, with an expiring date stamped on the label.

Manufactured by Hynson, Westcott & Co., Baltimore, Md. Not patented or trademarked.

FERRO-SAJODIN.—Basic, ferric iodobehenate. Ferro-sajodin is basic, ferric iodobehenate having the approximate formula $(C_{21}H_{42}ICOO)_2(OH)Fe = C_{44}H_{85}O_5I_2Fe$, and containing about 5.7 per cent. of iron and about 25 per cent. of iodine.

Ferro-sajodin is produced by the interaction of iodobehenates and iron salts.

It is a reddish-brown powder, unctuous to the touch. It is insoluble in water; soluble in chloroform and ether. On heating it melts to a brownish-black liquid which emits an abundance of iodine vapors.

Actions and Uses.—It has the action of iodides and of iron. It is claimed to be more stable and palatable than ferrous iodide and not to injure the teeth or disturb the gastro-intestinal tract and is said to be free from a constipating tendency. It is claimed that it is easily absorbed but slowly eliminated, assuring a more prolonged effect.

It is indicated in conditions in which iron and iodine are employed, such as anemia, rickets, syphilis, chronic bronchitis, arteriosclerosis with anemia, etc.

Manufactured by the Farbenfabriken vorm. Friedr. Bayer & Co., Elberfeld, Germany, and Farbwerke vorm. Meister, Lucius and Brüning, Hoechst a. M., Germany. (Farbenfabriken of Elberfeld Co., New York.) Not patented or trademarked. Sold in the form of tablets only, see below.

Tablets of Ferro-Sajodin, 8 grains.—Each tablet contains ferro-sajodin 0.5 Gm. (8 grains).

Dosage.—1 or 2 tablets, three times daily; for children ½ to 1 tablet, three times daily.

Tablets should be thoroughly chewed before swallowing, or in the case of small children crushed before administration.

NON-PROPRIETARY BRANDS OF ACCEPTED ARTICLES

Having been found to comply with the standards adopted, the Council voted that the following brands of accepted articles be listed:

Scarlet R. Medicinal Biebrich, Merck.—
Manufactured by E. Merck, Darmstadt, Germany (Merck & Co., New York).
Not patented or trademarked.

Sodium Perborate, R. & H.—
Manufactured by the Roessler & Hasslacher Chemical Co., New York.
Not patented or trademarked.

PHARMACEUTICAL PREPARATIONS ACCEPTED FOR N. N. R.

The following dosage form of an accepted proprietary article has been accepted for N. N. R.

Supracapsulin Ointment.—An ointment containing 0.1 per cent. of Supracapsulin in a base of hydrous wool fat.

Therapeutics

ASPHYXIA

(*Concluded from page 1057*)

ASPHYXIA FROM SUBMERSION: DROWNING

Most individuals who become asphyxiated from submersion in water or from drowning are dead when they are taken out of the water, and all efforts to restore them to life are futile. This is especially the case if complete submersion has lasted four or five minutes. The occasional instances of the successful treatment of this form of asphyxia, however, make it incumbent on the physician to be thoroughly informed as to the best methods to employ in the treatment of these cases, and to be prepared to carry them out if he happens to be near by when the patient is taken out of the water.

In the first place, the water must be expelled, so far as possible, from the respiratory passages. Probably there is no better way of doing this than by inverting the patient by taking hold of his feet and raising them up and letting his head hang down. This is a simple maneuver, provided the bystanders have strength enough to carry it out. Rolling the patient on a barrel is a crude and harsh substitute. Having removed the water as far as possible from the chest, the next thing to do is to perform artificial respiration. There are a number of methods of doing this.

The so-called method of Marshall Hall was first described in 1858, and consists in rolling the patient alternately from the lateral to the prone position and pressing on the back between the shoulder blades when he is in the latter position. This has the advantage that the tongue does not fall back into the throat and so obstruct the larynx, and the water and mucus are able to flow out of the month.

The following year the so-called Sylvester method was described. This consists in allowing the patient to lie on his back with his shoulders raised and his head hanging low. The operator then takes hold of the arms of

the patient above the elbows and draws them gently away from his body until they arrive at a point above his head. This raises the ribs and increases the capacity of the chest. The arms then are carried down by the side and the elbows flexed and pressed against the lower part of the chest, thus diminishing the capacity of the chest and driving the air out. In this method the tongue is likely to fall back into the throat and interfere with respiration unless some one grasps it and pulls it forward.

In 1868, Dr. B. Howard, of New York, described a method of treating these cases which consists in laying the patient on his back while the physician kneels over the lower part of the body and presses on the lower part of the chest so as to diminish its capacity. He then relaxes the pressure, and the natural elasticity of the chest increases the air capacity. In this method also the tongue is liable to fall backward, and must be drawn forward. It is objected that in elderly patients the ribs are brittle and may be fractured, and that the liver is congested and may be ruptured.

Finally it remains to describe the method known as that of Professor E. A. Schäfer, professor of physiology in the University of Edinburgh. He recommends that the patient be placed in the prone position. The physician being astride the patient, the open hands are placed on either side of the lower ribs and firm, but not violent pressure is exerted. This may be done by allowing the weight of the body to come on the arms. After this pressure has been exerted for three seconds the body may be brought upward and the pressure relaxed. This should be repeated at intervals of five seconds, or twelve times in a minute.

Schäfer made investigations with a view to comparing the utility of the various methods of artificial respiration. He found that in natural respiration the air exchanged in a minute by a person breathing thirteen times a minute was 5,850 c.c. The amount of tidal air at each breath therefore would be 450 c.c. Employing the Sylvester method, the amount of air exchanged in a minute was 2,280 c.c., showing the tidal air of each breath to be only 175 c.c. With the Marshall Hall method the exchange of air was 3,300 c.c., with a tidal air volume of 254 c.c. With the Howard method the exchange per minute is 4,030 c.c. and the tidal air volume 310 c.c. With his own method he was able to pump through the lungs per minute 6,760 c.c., showing a tidal air volume of 520 c.c. He therefore believes that this is the most efficient method of performing artificial respiration. He states that the advantages are: "1, it is fully efficient; 2, it can be performed without fatigue by a single individual; 3, it is simple and easily learned; and 4, it allows the tongue to fall forward, and the mucus and water to escape from the mouth, so that the tendency of these to block the passage of air, which is inherent to the supine position, is altogether obviated."

This subject was discussed at considerable length by Professor Schäfer in THE JOURNAL, Sept. 5, 1908, page 801.

In treating these cases it is important to preserve so far as possible the warmth of the patient. Woolen blankets should be obtained, and, after the surface of the body has been thoroughly dried, wrapped about him. While artificial respiration is being employed, friction of the surface of the body, especially from the extremities toward the center, should be carefully but not roughly done. It is recommended that artificial respiration should be continued for from one to two hours, but it seems that there is very little use in continuing efforts to restore respiration after the action of the heart has ceased. As long as the action of the heart continues, the artificial respiration should be continued, regularly and systematically.

Some hospitals are establishing apparatus for promoting and compelling respiration in patients who have from ether, chloroform or other acute causes, ceased to breathe.

PRESCRIPTION-WRITING

While not strictly therapeutics, correct prescription-writing is such a close corollary to good therapeutics that it seems pertinent to introduce it in this department, and although some of the material which will appear in this and a few subsequent issues seems elementary, it is hoped that the physician who cares to read it will pardon such detail in order that the subject may be presented entire.

CHAPTER I.—INTRODUCTION

Therapeutics in its broadest sense is the ultimate aim of the science and practice of medicine. It includes not only drug therapy, to which its definition is so often erroneously limited, but also everything that has to do with the treatment of the disease, the management of the patient, of his convalescence, of his permanent return to health, and of the prevention of disease attacking the well. In other words, it is the practical application of all of the knowledge acquired by study, research and practice to the understanding and treatment of disease.

Besides aiming to suggest orthodox and valuable methods of treating some of the common diseases, it is the object of this department also to aid in the proper writing of prescriptions, as nothing more denotes an educated and up-to-date practitioner than his ability to write simple and correct prescriptions.

That it is utterly unimportant to the patient what name the physician gives to his disease or condition is self-evident. He comes to be cured, or at least to have his troublesome symptoms ameliorated, and while a diagnosis is positively essential for perfect therapy, fortunately or unfortunately, it is not always necessary for an amelioration of his symptoms or even, sometimes, for his cure. Consequently, many times the patient is as successfully treated, from his point of view, by a quack or an ignorant practitioner as he is by a scientific physician. It is also unfortunately true that many a scientific physician, owing to his medical training and to some of the best text-books on the practice of medicine, delays the amelioration of the patient's symptoms until slow laboratory processes have made a definite, positive diagnosis. Such diagnosis having been made, he is content to treat the cause of the condition, forgetting even the pain the patient is suffering, and thus his patient is often driven to quackery or dogmas or "patent medicines," and often improves from such treatment.

It should be taught not only in the therapeutic departments, but in the internal medicine departments of every medical school, and no text-book on practice should be considered complete unless it teaches that the uncomfortable, disagreeable and non-eliminative symptoms of a disease must be attended to and therapeutically managed while the disease itself is being scientifically combated. Every clinician well knows that it is the consultant only who can ignore the treatment of troublesome symptoms. All successful quackeries succeed because of their ability to relieve symptoms or to cause such mental

suggestion as will relieve overtaxed minds, and many a loyal patient is driven to employ quackery by scientific neglect.

The administration of drugs is only a small part of the management of disease, and the management of disease is the highest pinnacle of the medical curriculum. It presupposes all the physiologic, chemical, anatomic, pathologic, bacteriologic and pharmacologic knowledge that can be obtained. This knowledge is then brought to bear on the management of the disease, which means necessary hygienic changes, perhaps a change of climate, an arrangement of the food and drink, physical treatment if indicated, such mental treatment as is advisable, such medicinal treatment as is needed, and necessary operative procedures, and, altogether, this is therapeutics. The subject of therapeutics is, then, the broadest and the hardest one for the medical student to grasp, and it is safe to say that the young graduate in medicine, even after a hospital course, is less prepared in the bedside and office management of disease than in any other branch of his art.

A proper understanding of and proper teaching of the ability of the mind to overcome many nervous disorders, to prevent the misinterpretation of, and the exaggeration of, slight physical disturbances should be encouraged. Psychotherapeutic instruction should be given in every medical school, and hospitals should have psychotherapeutic wards.

As scientific practitioners are just passing out of the age of drug nihilism and a belief that because a disease cannot be cured by specifics the patient should receive no treatment, we find the necessity for a better understanding of pharmacology. Just as a mental therapist will be cured of absurd prognoses and beliefs by the study of pathology, so does a thorough knowledge of the pharmacologic action of drugs prevent a doubt of their efficiency. Hence it is absolutely necessary for every medical school to furnish laboratory pharmacologic instruction. The medical graduate after such a course will demand pure, active drugs, and will use them rationally.

It is time to repudiate the assertion that Nature is a good physician or a good surgeon. It is not necessary to controvert the belief of ancient, medieval and modern medicine, as evidenced by the various Greek, Arabian, Latin, German and English terms, that the human organism is able to combat poisons and infections and to heal lesions. But we have now come to the time when it should be recognized that we not only must not obstruct in the human body the processes of eradication of an infection which natural metabolism has established, but that it is just as futile and just as absurd not to aid in combating an acute or chronic disease with the proper drugs, all correct physical and hygienic methods having been instituted, as it is to allow pus to burrow and cause serious consequences instead of properly evacuating it. In other words, natural processes are fighting just as much to perpetuate the condition or disease or infection that is abnormal to the part, as are the natural processes of the human body endeavoring to eradicate these foreigners who have invaded their stronghold. Who for one moment can think that the cancer cell is not attending to its natural function of multiplying and eating into healthy tissue, and who would allow to-day such a process to go untreated? Who would allow the diphtheria germ and its toxins to have full sway without the use of its opponent, antitoxin? It is just as absurd to declare that pneumonia and typhoid fever need no medication as it would be to declare that diphtheria needs no antitoxin and no antiseptic gargles.

The proper use of drugs that have physiologic activities being acknowledged helpful and often curative agents, it is self-evident that we expect and demand a standard of strength and purity of such drugs as laboratory and clinical determinations have proved valuable. Consequently, we await the ninth revision of the United States Pharmacopeia with hope and faith that it will furnish the standards of useful drugs, and trust that it will not officialize and attempt to standardize drugs of no therapeutic value and of no pharmacal necessity. A standard book that contains many useless articles and standardizes many common substances insults its articles of value and loses them in a fog of uselessness.

While simplicity in prescription-writing is advisable, it cannot be gainsaid that the art of combining drugs or of rendering a drug less disagreeable should be taught in the medical schools. Even with this laudable object in view, however, it is not justifiable for a physician so to belittle his profession and forget rationality in his treatment of a patient, to say nothing of the enormous graft which he hands the proprietary firms from the pockets of his patients, by ordering proprietary mixtures. The physician who orders such preparations does not realize the positive harm he often does his patients, in some instances almost amounting to criminal negligence. No one deems it reputable, or scientific, or just to patients to prescribe preparations the ingredients of which he does not know. This is little less than malpractice. The patient pays for our opinion. If we prescribe a nostrum, it is fraud, as he could prescribe his own nostrum without paying our fee. He seeks intelligent advice and knowledge, and we have cheated him by giving him unknown mixtures or ignorance. With the aid of an honest druggist, by means of our Pharmacopeia and National Formulary, we hardly need a single proprietary mixture in the medicinal treatment of disease.

Few physicians know the range and compass of these books. They contain sixty cerates, ointments, salves, mulls, petroleums and collodions. Can any one doubt that with this number of greases a good sedative or stimulant ointment could not be selected, or any combination made that was desired? They also offer seventy-seven oils, waters and liniments for external use; certainly all the rubs that there is room for on the human body. There are at least twenty-two simple and antiseptic dusting powders; certainly enough. So much for external remedies.

The Pharmacopeia of 1900 contains two vinegars, seventeen waters, three elixirs, six emulsions, twenty-eight extracts, eighty-five fluidextracts, two glycerites for internal use, about twenty liquors or solutions for internal use, four mixtures, six oleoresins, forty-five oils, fourteen pills, nine powders, four resins, twenty spirits, twenty-nine syrups, sixty-four tinctures, nine troches and ten wines; while the National Formulary contains one vinegar, sixty-four elixirs, nine emulsions, two extracts, thirty-six fluidextracts, four glycerites, more than thirty-eight solutions, eighteen mixtures, twenty-one pills, nineteen powders, three spirits, thirty-seven syrups, twenty-seven tinctures, and ten wines. No sane person would advocate using all of this heterogeneous mass of preparations, but every physician can, with the aid of his druggist, select the few formulas that he will use that will be as elegant and pleasant methods of giving drugs as proprietary preparations, and, moreover, will represent guaranteed doses of the various ingredients of the formulas selected.

While the use of some of the preparations above named is advised, it should be understood that it is much

better to combine one's own prescription to fit the individual case, but these official preparations preclude the necessity for using proprietaries.

Now, what are the bugaboos that make the physician reach for the proprietary preparations?

First, tonics: The first drug to consider is iron, and the proprietary preparations of organic iron are legion. There is not a single, good, substantial reason why we should order any one of them, and certainly the profit ordered by physicians to be paid by trusting patients to foreign manufacturers is unjustifiable. No iron will act any better than an inorganic iron. If there is an idiosyncrasy against it, smaller doses should be used, and, ordinarily, too large doses of iron are given. The reduced iron, the mass of carbonated iron, the pill of the carbonate of iron, the saccharated oxid of iron (*Eisenzucker*) in tablets for children, the tincture of the chlorid of iron, the syrup of the iodid of iron, with ten elixirs in the U. S. P. and N. F. containing iron, and any number of other iron salts can do all in the iron line that it is possible to do. No "patented" iron can do therapeutically what we cannot do with one of the first five mentioned iron preparations.

Now as to beef: Is there any beef preparation made, in recommended daily dose, that can equal a small piece of steak, a little scraped beef *pâte*, a little chopped raw beef, or expressed beef serum? No.

As to other albuminoids and protein foods, a little milk, a little white of egg, a little oatmeal gruel, and many other simple nutriments preclude the necessity for their use, except in rare instances.

We do not need a "patented" bitter tonic. We have the compound tincture of gentian, the compound tincture of cinchona, and the tincture of nux vomica, in one to five drop doses, and we need for bitter tonic purposes no other.

As to stimulants: It is not necessary to pay for a poor "patented" sherry. We had much better order whisky, brandy, sherry, ale, or champagne, as needed, and the patient will save money and receive better stimulation.

As to digestants: Very rarely is pepsin needed, and pancreatin is of but little value in the stomach. If they are needed, the Pharmacopeia and National Formulary offer several preparations for a choice. Even predigesting powders are furnished by these official books. In other words, the long list of proprietary digestants is not needed.

We do not need the fat and oil emulsion proprietary preparations. The oil emulsions of the U. S. P. and N. F. are sufficient, if we desire them. Straight doses of cod-liver oil are better, and cream, butter and olive oil surpass any fat emulsion. We need no proprietary suspensions of oils, as the U. S. P. and N. F. offer all that are needed from turpentine to castor oil.

Tasteless quinins are mostly useless, and the various methods at our disposal of giving quinin allow us to surmount all difficulties of age and taste and we need no proprietary help other than the free-to-all elegance of the elastic capsule.

We do not need the legion of "patented" preparations of glycerophosphates and lecithin, as the National Formulary furnishes an elixir of glycerophosphates with lime and soda.

Concerning the long list of antipyretic preparations, cough-mixtures, hypnotics, and nerve sedatives, there is but one thing to say, viz., that any physician who thinks he is unable to write the prescription needed for the individual who requires such medication should instruct himself in the method of writing for such drugs and arranging such pharmacally and pharmacologically correct combinations as will suit the needs of his patients. A long list of antipyretic "coal-tar" drugs is not needed. The official antipyrin, acetanilid and acetphenetidin (phenacetin) are all that need to be used. Caffein, camphor, soda, phenyl salicylate (salol), and any other drug can be combined with them, if desired. As to cough-mixtures: What codein, ipecac, ammonium chlorid, potassium iodid, terpin hydrate, and syrup of hypophosphite cannot do, cannot be done at all with drugs. Any or all of these should be given with absolute omission of the ancient, nasty, sweet and nauseating syrups. There are no combinations of hypnotics that cannot be better made by ourselves, and for much less cost to our patients.

None of this should prevent a physician from trying a new drug if he thinks it is an honest one, because we should be ever ready to make use of a valuable discovery, but never to further a fraud. Such a new drug should be ordered straight or used only in our own combinations, and never in a ready-made mixture offered by the firm interested.

Nerve sedatives for hysteria and allied conditions are either useless and act by suggestion, or they carry the danger of forming a drug habit. We should write for our own patients our own prescriptions.

Among the various uric acid and gout-curing preparations fraud and credulity are rampant. The regimen and extra water abolishes symptoms, if anything is done at all, and of all waters, pure distilled water is the best. It is not intended to assert that a sojourn at a water health resort is not of first-class advantage, because it is. A change of climate, a change of water, a change of food (cooked differently, hence often chemically different), a change of life and freedom from worry, and a change of exercise are the factors that do good, and not "urate solvents." This is not to declare that minute doses of some chemical ingredient in certain waters, taken for a long time, may not modify metabolism; this must be acknowledged, but it does not alter the absolute falsity of the lithic acid and urate solvent promises.

Next we come to the effervescing preparations, and here we should lean on the druggist. A large number of effervescing preparations are official, but any favorite combination of any physician can be prepared by his druggist to effervesce at a cost much less than the same in proprietary bottles that are blazed to show the laity that they are proprietary, and unless the druggist is particularly careful, carry a lot of quack literature into the family, which is read with avidity, "as the doctor ordered it," all for a price which furnishes a splendid profit to the concerns making these preparations, but hardly enough profit to the druggist for shelving them.

As to disinfectants: Again the Pharmacopeia and National Formulary come to meet our needs with mercuric chlorid, phenol, hydrogen peroxid, formaldehyd solution, potassium permanganate, chlorinated lime, and various solutions; and the druggist is ever ready to make in large quantity, or strong for solution, any disinfectant that we may select. Also, he can readily make any alkaline mouth-wash that we may elect, if the two that are official are not satisfactory.

The art of writing our own prescriptions is only a question of a book or two, a little study, careful selection of official preparations, a few heart-to-heart talks with a trusted druggist, and the thing is an accomplished fact.

(To be continued)

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[For other information see second page following reading matter]

SATURDAY, SEPTEMBER 30, 1911

DIABETES

The diabetes produced in animals by complete or almost complete removal of the pancreas so closely resembles human diabetes in its essential features that it is reasonable to hope that any method which will cure the former will also be of use in the latter; any light which may be obtained on the experimental form will also help to a better understanding of the human disease. We commented some time ago[1] on the futile efforts which had been made to control diabetes in animals by the administration of extracts of the pancreas and compared them with the similarly futile efforts to treat human diabetes in this manner.

Hédon,[2] one of the most experienced and critical experimenters in this field, has recently made some important observations on experimental diabetes. He has long taken a critical attitude toward the theory of an internal secretion of the pancreas, maintaining that it could not be considered as proved until an experiment could be devised in which the experimental diabetes could be checked by the administration of a product obtained from the pancreas. He speaks of the negative results obtained from the injection of various extracts of the pancreas, of the serum from the pancreatic veins, etc., and remarks that he was near believing the process to be an irreversible one. He had found that when a crossed circulation was established between a normal and a diabetic dog, sugar disappeared from the urine of the latter. Such a result would have been interpreted by a less critical observer to mean that the internal secretion of the normal dog had checked the diabetes in the other dog. Hédon, however, found that when the circulations of two diabetic dogs were crossed there was also a diminution of the glycosuria; such a result suggests that the effect was due to an action on the permeability of the kidneys for sugar.

In the present experiments a portion of the pancreas of a normal dog was inserted into the circulation of a diabetic dog. When the carotid and jugular were used there was no effect on the glycosuria of the diabetic dog; when, however, the pancreas was inserted into the circulation of the spleen, the sugar almost disappeared from the urine after some hours but returned when the connection between the two animals was broken. Thus a normal pancreas checked the glycosuria only when it was so placed that its internal secretion entered the portal circulation directly.

Hédon and others had found that the injection of blood from the pancreatic vein of a normal dog into the general circulation of a diabetic dog had no effect on the glycosuria of the latter; he now finds, however, that if the blood be injected into a mesenteric vein of the diabetic dog the glycosuria falls for a time almost to zero. In all of these experiments, however, there was far less diminution of the sugar in the blood than of that in the urine; the first effect of the pancreatic secretion was to render the kidney less permeable to sugar.

These experiments are significant. They constitute the first demonstration that an internal secretion of the pancreas can check a diabetes already established; this was accomplished, however, under conditions so far removed from anything which can be realized in therapeutics that an effective treatment of human diabetes by pancreatic extracts seems more remote than ever.

These experiments also emphasize the importance of the liver in diabetes and lend further support to the view, which seems to be gaining many adherents, that the cause of diabetes is to be sought in an overproduction of sugar (chiefly in the liver) rather than to a diminished oxidation of sugar; according to this view the function of the internal secretion of the pancreas is to inhibit the production of sugar rather than to facilitate its consumption.

These, and some earlier experiments of Hédon, go far toward explaining the almost uniformly negative results from the use of pancreas in human diabetes; they also make it very probable that the favorable results reported by three or four writers had no connection with the pancreas which had been administered. In some of the cases the beneficial effects were stated to continue for long periods after the administration of the pancreas was discontinued. An animal becomes diabetic within an hour or two after removal of the pancreas; that is, the secretion disappears from the blood exceedingly rapidly even under the most favorable conditions of secretion. These alleged favorable results constitute the sole "evidence" that has yet been offered in support of the view that the internal secretion of the pancreas is absorbed when administered by the mouth. It may be considered as certain that the improvement noted in such cases was in no way dependent on the internal secretions of the pancreas administered.

It is well to remember the caution recently emphasized by Sewall,[3] who says: "It is, of course, unnecessary to dwell on the well-known fact that the clinical course of diabetes mellitus is at times apparently subject to amel-

1. THE JOURNAL A. M. A., June 3, 1911, p. 124.
2. Hédon: Compt. rend. Soc. biol., July 14, 1911, p. 124.
3. Sewall: Am. Jour. Med. Sc., Sept. 11, p. 321.

ioration under a great variety of conditions and remedies which probably have no specific relation to the pathologic process."

It should be added, however, that, according to Falta,[4] there is a small group of cases of diabetes in which the administration of pancreas by the mouth gives good results; but in these cases there is some interference (usually the result of lithiasis) with the secretion of the pancreatic juice into the intestine. These cases are not comparable to ordinary diabetes.

COMMERCIAL ANTISTREPTOCOCCUS SERUM

In these days of the preparation of immune serums by proprietary houses, it is obvious that many such products will be of problematical virtue; so that a recent study of various commercial antistreptococcus serums by Weaver and Tunnicliff[1] possesses a distinct practical value, aside from the theoretic interest always attaching to such work.

In a previous preliminary report[2] these investigators had announced their almost complete failure to find any action of such serums on laboratory animals; and it is encouraging to note that the results of their more complete later work are at variance with this, and show, in several of the commercial preparations, a distinct protective power.

The first part of their work consisted in the testing of fresh specimens of antistreptococcus serum, obtained from one of the commercial houses, as soon as possible after its withdrawal from the animals. Such serums were tested both for their protective power in guinea-pigs against later doses of virulent streptococci, and for their content in opsonin. The latter was found to diminish fairly rapidly, until at the end of a month it had disappeared completely. It could be almost completely restored, however, for variable periods afterward by the addition of dilute fresh normal serum, and the protective power for animals was found to coincide quite closely with this period of capacity for reactivation. The injection of the serum into the animals resulted, as might be expected, in a rise of their opsonin for streptococcus, and also of the phagocytic activity of their leukocytes, and this rise of phagocytic power seemed to be specific for streptococcus. The duration of the protection was about eight days—corresponding very closely with the period of increased opsonin content in the blood.

Five commercial antistreptococcus serums, three of American and two of European preparation, were studied similarly. Of these, both of the foreign and two of the American serums protected guinea-pigs against a minimal lethal dose of streptococci in quantities of from 1 to 6 c.c. The third American serum had no evident protective action. Of course, the administration of a correspondingly large dose to man would be out of the question, but there are apparently reasons for believing that relatively smaller doses may be efficient in cases of human infection; for it was found that the immune serums were reactivated more readily and to a greater degree by human than by guinea-pig serum, so that the same amount may well possess a greater protective power in man than in the guinea-pig. And the usually localized and more prolonged human infection presents an entirely different, and possibly less difficult, problem, than the very acute generalized infection of laboratory animals. Clinical observation has shown, however, that large doses are most effective, and concentration of the serum might be of great value. The possibility of such concentration is pointed out by Weaver and Tunnicliff, who found the antibodies to be united with the pseudoglobulins of the serum as is the case with diphtheria antitoxin.

In view of the fact that one of three of the American serums was found apparently quite inactive, the recommendation of the investigators, that a guarantee as to efficiency be furnished, similar if possible to that of diphtheria antitoxin, seems very reasonable. With such an assurance of reliability, it is probable that the antistreptococcus serums would rapidly acquire a greater importance than their present uncertainty gives them. In this connection, however, it may be well to emphasize the necessity for making an accurate bacteriologic diagnosis previous to the use of such serums, as without this it is impossible to expect consistent results.

EFFECTIVE GARBAGE DISPOSAL

Until lately American practice in the matter of garbage disposal has not been a matter for national pride. Two methods have been common: unsightly, malodorous piles of decomposing refuse have been — in some places still are! — allowed to accumulate in the vicinity of dwellings, or cheap, ineffectual "disposal plants," installed and operated by greedy or dishonest private contractors, have been run for a few years and then allowed to lapse into well-earned oblivion. Neither procedure is creditable to a civilized state. There are now signs that the era of slovenliness and waste in this as in many other municipal activities is drawing to a close. In many places local conditions are being studied by unpaid competent commissions rather than exploited by junketing aldermanic committees. A beginning has been made in establishing high-grade modern plants under expert supervision and in operating them under expert management, which is just as important.

As the reports of some of these plants are coming in we can see more clearly than ever what a mess has been made in the past by the representatives of the people in

4. Falta, W.: Therapy of Diabetes Mellitus, Arch. Int. Med., 1909, iii, 160.

1. Weaver and Tunnicliff: Jour. Infect. Dis., 1911, ix, 130.

2. Preliminary Report of Investigations of Serums and Vaccines for Streptococcus, Staphylococcus and Pneumococcus Infections, THE JOURNAL A. M. A., Jan. 25, 1910, p. 257.

dealing with this question. There is really no need for a continuance of the offensive and wasteful methods that have been commonly employed in this country. The best expert advice backed by practical experience with American conditions is now available at a moderate price and there is no excuse for any community placing itself in the hands of self-seeking contractors and promoters.

At least two methods of garbage disposal have proved effective in typical American cities: incineration and reduction. In the incinerating type of plant all kinds of refuse, ashes, paper, rags, scraps of food, kitchen waste, etc., are fed together into crematories and burned. In European works of this type the heat generated by the combustion with a forced draft is a source of considerable revenue. One of the best examples of an incinerator plant in this country is the Milwaukee incinerator, which has been in full operation since May, 1910. Constructed and operated under excellent engineering control, this plant may well serve as a model for other cities.[1] At the old Milwaukee plant the cost of disposal reached as high as $1.37 per ton of garbage, while the cost at the new plant is less than 60 cents per ton. If the excess supply of steam generated at the plant is economically utilized the actual cost will be further greatly reduced.

In garbage reduction works the sorted garbage is passed through various digestors, tanks and roller presses with a view to extracting the valuable portions, especially the fats and the nitrogenous matters. The process needs careful management on account of the offensive gases generated during the treatment. The prevention of a nuisance entails some expense, and hence privately installed reduction works operated for commercial purposes often give rise to much justifiable complaint. Municipal plants constructed with an eye to the comfort of the citizens rather than the pockets of contractors are likely to be much more effectively operated than private ones, as shown by the experience at Columbus, Ohio. The Columbus plant, put in operation in July, 1910, is the first reduction plant in this country designed and constructed by a municipality.[2] "It was not the intention in designing the Columbus plant to try experimental machinery, but rather to assemble to best advantage machinery of known and tried types and only such as had proved most satisfactory in other plants." Successful financial operation of this plant appears in the fact that it netted $2,000 a month for the first six months.

The reasonable and businesslike way of approaching the garbage disposal question seems therefore to be the employment of a reputable and competent engineer to examine local conditions and report on such topics as the most economical routes for collection and transportation, the establishment and location of one or more centers for disposal and the final method of treatment—incineration or reduction—best suited to the amount and nature of the refuse gathered. Small towns should beware of the man with patented machinery. In all cases the expert adviser is better than the quack.

1. A full description of the Milwaukee incinerator, with drawings and operating data, is given in the Engineering News, July 21, 1910.

2. For description, with diagrams and photographs, see Engineering News, Nov. 17, 1910.

THE CHOICE OF A MEDICAL SCHOOL

At the present time doubtless hundreds of students are wavering in their choice of a medical school—a choice which is of the utmost importance to their future welfare. Before the selection of a medical school is made, the student should inform himself regarding the legal requirements for the practice of medicine, which have been undergoing many changes during the last few years. It is well known that the legal control of the practice of medicine in this country rests, not with the national government, but with the individual states, and that the forty-nine states and territories differ widely in their requirements. It is extremely important, therefore, for the student to know what qualifications he must possess in order to secure a license in the state where he desires to practice. For example, he should know that in order to secure a license in Colorado, Indiana, Iowa, Minnesota or North Dakota, he must have had two years of collegiate work or its equivalent, and that in Connecticut, Kansas, South Dakota and Utah he must have completed one year of collegiate work before beginning the study of medicine. Furthermore, if he desires to secure a license in any of the above-named states or in any one of the nineteen others, he must take his medical training in a college which is considered a "reputable" institution, or one which has been "registered" in the state where he expects to locate.

State boards have various methods of determining what colleges are "reputable." Some make their own inspections, either in person or by proxy; others base their judgment on the reputation held by the colleges; some require that the institution hold standards equal to those of the Association of American Medical Colleges, and of late several states have decided to recognize only those colleges which are listed in Class A by the Council on Medical Education of the American Medical Association.

Each year the requirements by state boards are becoming more exacting. The number of boards which will require one or two years of college work as the minimum of preliminary education will doubtless increase and the requirements regarding the equipment and facilities of medical schools will become more rigid. As will be noted in the Current Comment Department below, any medical college, to be registered in New York after Oct. 1, 1912, must have at least six salaried instructors devoting their entire time to college work besides having ample apparatus and equipment.

Another requirement by state boards which the prospective medical student must consider seriously is that

of the state license examination. Year by year these examinations are becoming more severe and the student should use much care in selecting a medical college which will best prepare him for those examinations. Information on this point can be obtained by a careful study of state board statistics such as are published annually in THE JOURNAL.[1] It would be a serious matter indeed to select a medical school having a high percentage of failures of its graduates at state license examinations when doubtless for the same expenditure of time and money the student could secure a training in a first-class medical college.

The student may well be guided by the reports on medical colleges also published from time to time in THE JOURNAL. From the investigations made by the Council on Medical Education, the colleges having what was considered an ample corps of teachers and satisfactory laboratories, equipment and clinical facilities, were listed as acceptable schools, that is, in Class A. Schools which were not so well equipped, or which were considered unsatisfactory were listed respectively in Classes B and C. Of the Class A colleges, twenty-eight[2] are now requiring two or more years of collegiate work for admission. The student will not be making a mistake should he select one of these twenty-eight schools, the diplomas from which are acceptable at present in practically every state of the Union. The student having had less than two years of collegiate work, should investigate carefully, before deciding on a medical school, the requirements of the state or states wherein he would like to locate. Furthermore, he should consider whether it would not be better for him to secure the additional preliminary education which would admit him to a medical school wherein he could get the best possible medical training and from which he could secure a diploma making him eligible for a license in any state of his choice. Disappointed indeed will be that student who, after having spent a large amount of time and money, finds on graduation that his diploma is not recognized in a large number of states.

1. THE JOURNAL A. M. A., May 27, 1911, p. 1558.
2. THE JOURNAL A. M. A., Aug. 19, 1911, pp. 640, 641.

Current Comment

MAGAZINE ARTICLES WHICH ARE WORTH WHILE

An important factor in the crusade for better health conditions is the active interest shown in this question by the better class of popular magazines. The part taken by *Collier's* and the *Ladies' Home Journal* is well known. In the last two or three years, many excellent articles on health matters have appeared in other magazines. Four articles in current periodicals are worthy of special mention. In the September number of the *Delineator*, Samuel Hopkins Adams, under the title of "The Health Master" gives in narrative form some plain truths about drug victims produced by "patent medicines" and soft drinks. In the October *Hampton-Columbian*, O. K. Davis gives the details of "The Case of Dr. Wiley" and the facts regarding the conspiracy to secure his discharge. In the October *Pearson's*, Earl Mayo discusses, under the title of "Public Health vs. Private Gain," preventable sickness and the duty of the government and, incidentally, the efforts that are being made to prevent the establishment of a national department of health and the reasons for the opposition. In the *Outlook* for September 23, the same writer has an excellent article on "The Work That Kills," a discussion of occupational diseases and means for their prevention. Such articles, by the best representatives of the modern school of American magazine writers, are of great educational value and are sure to do good. It is fortunate that our popular magazines, not willing to be confined to sentimental stories and trivial entertainment of their readers, have realized their great possibilities as an educational force and are usually to be found on the right side in any great battle for the public good. Such articles as the four mentioned are of inestimable value in enlightening the public on the needs and the methods of health reforms. More light, more knowledge, more education of the people must be furnished until the demand for federal action for the preservation of life becomes irresistible. It is by such means that lasting reforms can be brought about.

RELIGION AND QUACKERY

For years the religious press reeked with unsavory advertisements of nostrums and quacks of varying degrees of fraudulency and indecency. Public opinion finally forced the more influential church papers to throw out this class of advertising and to-day, except for some of the more insignificant publications, the religious journals are practically free from the blight of "patent medicine" advertisements. That quackery still seems to possess a peculiar fascination for the clergy, however, was recently shown in an episode that occurred at Kansas City, Mo. That city is the unfortunate possessor of a quack named Carson—Hiram Carson, or as he calls himself "Dr. C. H. Carson." This charlatan has grown rich, thanks to a venal press and the large supply of gullible sick. He used to "treat" by means of "vital force," developed by rubbing his victims with vaselin mixed with red pepper. The tingling produced by the red pepper was, he assured his dupes, the "vital force." Later he improved on this "treatment" and had his assistants give out slips of tissue paper that he had "magnetized." These slips the patients were instructed to pin on their nightgowns between the shoulder-blades! Carson is now operating what he calls the "Temple of Health," and advertising heavily. As a means of drumming up trade Carson occasionally gives elaborate "receptions" at his "Temple of Health," to which the curious are invited. A little while ago a meeting of this kind was held at which, as a crowning advertising stroke, Carson got the pastor of one of the leading Congregational churches of the city—the Rev. J. B. Silcox—to give an address! This address and other details of the "reception" occupied

nearly two columns in the Kansas City papers of the following day, and although a paid advertisement, the article was set up in news-matter style. Why a reputable minister of the gospel, whose own church membership is strictly high-class and, we are informed, includes some of the best-known medical men of the city, should endorse such a blatant quack as Carson, is a mystery. Every intelligent layman in Kansas City knows that Carson is a humbug and that his system is a fake. Every man in that city also knows, or could know, that Carson's only claim to the title "doctor" lies in his possession of a "diploma" from as wretched a mill as ever ground out parchments—the American Health College of Cincinnati, long since defunct, thank heaven! If there is one class of men more than another that should stand between suffering ignorance and the machinations of the miserable harpies of the Carson type, it is the ministry. If there is one man more than another who should expose the deception and covetousness of the quack, it is the man who professes to follow the teachings of Him whose voice was always raised against shams and cheats and the cupidity of avarice. Yet we have, in the address of Rev. Mr. Silcox, the unedifying spectacle of a Christian clergyman lending the influence of his cloth and personality to further the cause of one who fattens by deceiving the sick and suffering.

ADVANCE STEP IN MEDICAL EDUCATION BY NEW YORK

About a decade ago the Revised Statutes of New York fixed a requirement, among others, that any institution to be ranked as a college should have "at least six professors giving their entire time to college and university work." The investigation made by the Council on Medical Education revealed the fact, however, that the Board of Regents did not make this rule apply to medical colleges of New York or of any other state. It remained for the Council on Medical Education, in 1910, after having completed two tours of inspection of the medical schools in the United States, to publish an outline of the essentials of an acceptable medical college; this included the requirement of six full-time, salaried professors. The Council also published the following definition of a medical college, basing it on the New York law referred to above: "An institution to be ranked as a medical college must have at least six professors giving their entire time to medical teaching, a graded course of study of four full years of college grade in medicine, and must require for admission not less than the usual four years of academic or high school preparation or its equivalent in addition to the preacademic or grammar school studies." As will be seen by a news item which appeared last week,[1] the above definition has been adopted by the New York regents in an amendment to their revised rules, this amendment providing that, after Oct. 1, 1912, every medical college to be registered in New York as maintaining a proper medical standard must have at least six full-time instructors besides ample apparatus and equipment. The argument advanced in the regents' report for this amendment is as follows: "The value of a medical education like the value of a liberal arts education is dependent as much or more on the teachers in the medical college as on the material equipment of the institution. Certainly at least six expert, thoroughly trained instructors in the laboratory branches of the medical course, salaried so that they may devote their entire time to instruction and to that research without which they cannot well keep up with the rapid progress being made in their subjects, is not too many teachers to require for a medical school that is to be recognized in this state as thoroughly preparing for the profession of medicine candidates who are to receive a degree that will admit them to a licensing examination." The influence exerted and the prominent position occupied by the New York Education Department in the control of educational institutions in the United States makes this decision one of much importance, and one that will aid in the development of better teaching in the medical schools of this country.

1. THE JOURNAL A. M. A., Sept. 23, 1911, p. 1063.

LET CONGRESS INVESTIGATE THE "MEDICAL TRUST"

In the Medical Economics Department[1] appears an open letter from Mr. George P. Hampton, secretary of the Conference of Progressive State Granges to Senator John D. Works of California. Mr. Hampton's letter is worthy of note for two reasons: First, it definitely and officially contradicts the statement made by Senator Works, in his astounding speech in the United States Senate in defense of Eddyism, that the National Grange had repudiated its endorsement of a national department of health. Mr. Hampton proves that the National Grange really reaffirmed its previous endorsement. Second, the letter contains in its closing paragraphs the following pertinent remarks:

> "Christian Scientists fear the consequences that would follow the enactment of such legislation as the Owen bill proposes. If that fear is well founded, and your belief that the American Medical Association is a medical trust is well founded, is it not time that the country knew these and all the facts relating to this burning question? What possible better means have we than a rigid Congressional investigation by a committee specially organized for that purpose? The House of Representatives, as at present constituted, is believed to be honestly desirous of serving the people. It is investigating the trusts, probing into the expenditures of the various departments of the government, and why should it not have a committee on health and thoroughly investigate this matter of such vital importance to all the people. Surely the Christian Scientists are not opposed to honest investigation by a committee having power to probe every charge and countercharge to the bottom."

Mr. Hampton's position is a thoroughly sound one. If the American Medical Association is a "trust" or if it is endeavoring to create a trust, certainly the people should know it. If the physicians of the country are seeking a health department so as to create positions for themselves, and not to stamp out disease and save human lives, the public should know it. On the other hand, if the American Medical Association and the medical profession are earnestly and honestly striving to increase our knowledge of the cause and means of prevention of epidemics and to wipe out preventable disease, then the people should know this and should lend their aid in this life-saving campaign. As Mr. Hampton says, "Why should it (the House of Representatives) not have a

1. Page 1154, this issue.

committee on health and thoroughly investigate this matter?" Why should not the work of the American Medical Association be investigated? Why should not Congress be able to tell the American public the truth? Surely the needless loss each year of 600,000 lives is of as vital importance to the people as the price of sugar, tobacco or steel rails. Will Congress "investigate" the American Medical Association and its work? If it will, the books and records of the Association will gladly be produced and its officers and members will willingly testify, nor will any order from the courts be necessary to insure their presence. Investigation and credit for the work it has done and is now doing is exactly what the Association most desires, since it knows that the more the people know of its work for the public good, the more it will enjoy the confidence and support of the public.

Medical News

ALABAMA

Dispensary Open.—St. Vincent's Free Dispensary, Birmingham, was opened September 5. It is located in the basement of the new wing of the hospital, and is to be open from 2 to 4 p. m., daily excepting Sunday.

Personal.—Dr. Edward B. Bailey, Demopolis, luckily sustained only slight injury when his automobile fell into a 10-feet ravine, September 6.——Dr. Charles M. Moore has succeeded Dr. Rhett Goode, resigned, as health officer of Mobile.——Dr. Claude L. Murphree has been made meat and milk inspector of Gadsden.

ARKANSAS

Sanitarium for Colored Patients.—Dr. Claude M. Wade, Hot Springs, has secured the control of the Pythian sanitarium and bath house, which he proposes to use for the care of sick and indigent colored people who come to Hot Springs.

Personal.—Dr. James L. Greene assumed charge of the State Hospital for the Treatment of Nervous Diseases, Little Rock, August 31.——Dr. Harry C. Stinson, superintendent of the State Hospital for the Insane, took formal charge of the Confederate Home, September 1.——The home of W. T. Gabbert, West Forks, was destroyed by fire, September 12.

CALIFORNIA

State Branch Hygienic Laboratory to be Opened.—Arrangements are being made for the establishment of a branch hygienic laboratory in Los Angeles, where Pasteur treatment may be administered, and also where investigations regarding violations of the pure food law and of water pollution may be conducted.

University to Have an Isolation Hospital.—The board of trustees of Leland Stanford, Jr., University, Palo Alto, has granted a site for the erection of an isolation hospital for the segregation of students with contagious diseases. These cases have heretofore been quarantined in dormitories or private rooming houses. The hospital is to cost $10,000.

Personal.—Dr. Leonard E. Stocking, Agnew, superintendent of the Agnew State Hospital, has been given three months' leave of absence by the board of managers.——Dr. Harold Brunn, San Francisco, who has been seriously ill with pneumonia, is reported convalescent.——Dr. Douglas Brown, formerly of New York and Panama, has been appointed resident physician to the Spreckels Sugar Company, Spreckels.——Dr. J. Auburn Wiborn, San Francisco, fractured his right leg in a fall down an embankment at Klamath Springs recently.——Dr. Thomas R. Meux, Fresno, was seriously injured in a runaway accident, September 4.——Dr. Washington Dodge has been elected a trustee of the San Francisco Free Library.

COLORADO

Loving-Cup for First-Aid Contest.—A silver loving cup is offered by Dr. Thomas J. Forhan, Trinidad, for the best exhibition of first aid to the injured work by a team of school boys under the age of 16. The contest is open to the boys of any school in Las Animas County, and will take place at the time of the county fair.

Personal.—Dr. Benjamin F. Wooding, Denver, has retired from the State Board of Health.——Dr. Carl A. Helgeson, Grand Junction, has been reappointed inspector for the board of health of New York City.——Arnold Stedman, Denver, announces that he decided not to accept appointment as member of the State Board of Health.——Drs. John E. Sawyer, Denver, and Robert Elwood have filed incorporation papers for the opening of a sanitarium in Boulder, for the treatment of rheumatism.

GEORGIA

Officers Resigned.—At the adjourned meeting of the Clarke County Medical Association at Athens, September 9, the resignation of the president, Dr. Daniel H. DuPree, Athens, and the secretary, Dr. John Gerdine, Norfolk, Va., were accepted. Dr. Singleton S. Smith was elected president, and Dr. Samuel C. Benedict, secretary.

Pellagra Hospital Open.—Len G. Broughton, pastor of the Institutional Church, Atlanta, has opened a pellagra hospital in connection with the church. The institution will accommodate twenty-one patients. The permanent free clinic for the diagnosis and treatment of pellagra has been opened by the Atlanta Associated Charities in Room 708, Gould Building, and is open on Wednesday and Saturday from 5:30 to 6:30 p. m.

IDAHO

Personal.—Dr. Harley E. French, Moscow, has been elected professor of anatomy and dean of the medical department of the University of North Dakota, Grand Forks.——Dr. Arthur R. Soderquist, Idaho Falls, was thrown from his automobile recently and sustained painful injuries.——Dr. F. S. Wright has been appointed health officer of Salmon City.

ILLINOIS

Bequests to Hospital.—By the will of the late Emanuel Frankenthal, Chicago, $2,000 is bequeathed to St. Luke's Hospital, and a similar amount to Michael Reese Hospital.

Clinic for School Children at Evanston.—Dr. George W. Boot, president of the staff of the St. Francis Hospital, Evanston, announces that the hospital has arranged for a free clinic for school children needing attention on account of conditions found by school inspectors. The clinic will be held each Saturday at 1:30 p. m.

Tuberculosis Clinic Established.—The Springfield Tuberculosis Association held its first evening clinic between 5 and 6:30 p. m., September 14, at the dispensary, 717 East Washington Street. Evening clinics are to be held on every Thursday, to accommodate patients who are unable to attend during the working hours.

Personal.—Dr. J. N. Thresh, Danvers, who has been ill at St. Frances Hospital, Peoria, has returned convalescent.——Physicians of Mattoon gave a dinner, September 14, in honor of Dr. Cleaves Bennett, who has removed to Champaign.——Dr. Harvey L. Hensley, Oakwood, is reported to be critically ill.——Dr. Charles R. Spicer, Aurora, has been elected chief medical examiner of the Yeomen of America.

Hospital Notes.—The village council of Oak Park has refused permission to build the West Suburban Hospital in that village, on the ground that the management had failed to obtain the necessary consent of the neighbors to the erection of the building.——At the annual meeting of the officers of Proctor Hospital, Peoria, Mr. Oliver J. Bailey was reelected president. A memorial tablet was placed in the hospital in memory of the late Dr. John Murphy.——Dr. and Mrs. Edmund F. Cleveland, Dundee, have announced that they will furnish the dormitories on the first floor of Sherman Hospital, Elgin, now occupied by the nurses. The dormitories are to be remodeled and divided into six rooms, which will be used as wards for women and children. The gift is in memory of their daughter.

Chicago

Institute Does Not Employ Solicitors.—The Chicago Tuberculosis Institute announces that no solicitors are employed to collect money for the organization. The reason for this announcement is that two men are reported to have been soliciting money for the alleged benefit of the institute.

Neighborhood Health Lectures.—The Chicago Medical Society plans to give neighborhood health lectures throughout the city during the winter months. Public lectures have been given in the public library in previous years, and it is now proposed to extend the scope of these lectures by having

talks along health lines made in various sections of the city, and in school houses, if they may be obtained from the board of education.

Personal.—Dr. John Ridlon has been elected consulting surgeon for the Newport (R. I.) Hospital.——Dr. William S. Sadler sailed for Europe, September 23.——Dr. and Mrs. Charles S. Bacon and family, Dr. and Mrs. Alexander F. Stevenson and Dr. and Mrs. Arthur H. Geiger have returned from Europe.——Dr. Alexander H. Ferguson has taken in his first assistant, Dr. James J. Monahan, as his partner, and will take a rest for a year.

INDIANA

Wills Estate to Medical College.—The late Dr William Flynn of Marion has willed his entire estate, valued at about $30,000, to the Indiana Medical College, in which he was a member of the faculty for many years.

Grant County Hospital.—The Grant County Hospital Association has requested the county commissioners to make an appropriation of $50,000 for a county hospital to be built at Marion. Mr. Robert J. Spencer of that city has offered a site for the hospital, free of incumbrance.

Personal.—Dr. George M. Kakin, LaPorte, believed to be the oldest active practitioner in Indiana, is reported to be critically ill.——Dr. Adoniram J. Banker, Columbus, is reported to be critically ill in Indianapolis.——Dr. Hugh D. Wood, Angola, was seriously injured in a fall on a slippery sidewalk, September 18.

Hospital Trustees Resigned.—At a meeting of the Good Samaritan Hospital Board, held in Vincennes, September 5, a petition was read, signed by thirty-five members of the Knox County Medical Society, and a resolution of the Vincennes physicians was presented at a formal meeting which called for a radical change in the management of the hospital. With the expressed desire to reestablish harmony, three members of the board of trustees resigned.

IOWA

Personal.—Dr. Harley G. Ristine, Fort Dodge, was seriously injured while cranking his automobile, September 20.——Dr. Daniel Johnson Glomset has been placed in charge of the pathologic and bacteriologic departments of Drake University.——Dr. Paul Eugene Lineback has been appointed instructor in anatomy in the Drake University, Des Moines.——Dr. Jasper E. Guernsey, Olin, was injured in a runaway accident in Chicago, September 8.

Medical Library for Sioux City—Dr. John E. Garver donated his medical reference library to the Sioux City Medical Library Association. Several others have made similar gifts, and it is hoped that the library will become a permanent institution.

KENTUCKY

Tri-Medical Society Organized.—Physicians of Logan, Simpson and Warren Counties met at South Union, September 12, and organized the Tri-Medical Society.

State Health Car.—The Kentucky Association for the Study and Prevention of Tuberculosis is touring the state with a car fitted up as a traveling health exhibit, in charge of Mr. Eugene Kerner, secretary of the state association, and an assistant. The car is well stocked with charts, mottoes and model houses, showing where the dangers from diseases lie and how they can be prevented; and an illustrated lecture on "What Everybody Ought to Know About Consumption" is delivered at each stopping place.

LOUISIANA

Bequest for Home for Incurables.—By the will of the late Joseph E. Burguieres, $50,000 is devised to establish the Burguieres Home for Incurables, which is to be placed under the charge of the Sisters of Charity of New Orleans.

New Department in Medical College.—The Medical Department of Tulane University announces the inauguration of a department of tropical medicine, hygiene and preventive medicine, beginning October 1, in charge of Dr. Creighton Wellman and staff. Laboratory courses, clinics and lectures will be given in the regular junior and senior classes, in addition graduate courses are offered, for which certificates will be issued, counting toward special degrees to be created as soon as the Tulane School of Tropical Medicine is in force.

Antituberculosis Work.—During the last year the Louisiana Antituberculosis League has abandoned its former camp at St. Tammany Station, which was left practically inaccessible on account of the abandonment of that portion of the railroad, and has opened a new and well-equipped sanitarium for curable cases at Camp Hygeia in the same parish, 5 miles west of Slidell.——On September 4 the cottages at Camp Hygeia, erected by the Pythian Antituberculosis League, the Junior Order of United American Mechanics and two councils of the Daughters of America, were formally dedicated.——A site for the cottage to be erected at Camp Hygeia by the union printers' organization has been selected.

MASSACHUSETTS

Measles.—The White Star steamer *Romanic* from Mediterranean ports reached quarantine September 7, with three cases of measles aboard, but no indication of cholera. The steerage passengers were landed at Gallup's Island, where they were detained for forty-eight hours.

Personal.—Dr. Newell C. Bullard, North Attleboro, is reported to be in a serious condition at the Emerson Hospital, Boston, as the result of an automobile accident.——Dr. William J. Gallivan, Boston, former chairman of the Boston school board, has been selected for head of the bureau of school hygiene, under the direction of the Boston Board of Health, vice Dr. Paul Carson, resigned.——Dr. Francis X. Crawford, South Boston, has been appointed chief physician of the board of Boston, vice Dr. William M. Gay, resigned.

MICHIGAN

Banquet to Dr. Carstens.—A complimentary banquet was given by the Wayne County Medical Society, September 26, at the Hotel Cadillac, Detroit, in honor of Dr. James Henry Carstens.

Officers Installed.—At the first meeting of Wayne County Medical Society, September 18, after the summer vacation, the reports of the retiring officers showed that the society has 525 active members, an increase of 243 during the year; that it has a library of 12,000 volumes; that a nurses' directory of 250 names has recently been added and the café and weekly bulletins are more than self-sustaining. The following officers were installed: president, Dr. Henry O. Walker; vice-president, Dr. Benjamin R. Schenck; and secretary-treasurer, Dr. Robert C. Jamieson.

Personal.—Dr. and Mrs. Louis W. Toles, Lansing, sailed for Europe September 13.——Dr. Eugene W. Mullen, Newberry, formerly a member of the staff of the Newberry State Hospital, has resigned to accept a position in the Agnews (Cal.) State Hospital.——Dr. Francis J. W. Maguire, who has been seriously ill with septicemia, due to an operation wound, is reported convalescent.——Dr. Gilbert V. Chamberlain, Flint, has been appointed a member of the pension board of Flint, vice Dr. Hiram H. Bardwell, resigned.——Dr. Russell P. Wixom has been elected president of the Northeastern Detroit Business Men's Association.——Dr. and Mrs. Leslie G. Rhodes, South Haven, have returned from Europe.

MINNESOTA

Sanitarium Nearly Ready.—The new St. Louis County and Duluth tuberculosis sanitarium, now under construction, will be ready January 1. The main building is already nearly completed.

New Buildings on Campus.—The two new buildings for the University of Minnesota, Millard Hall and the Institute of Anatomy, are progressing well toward completion, and it is expected that they will be ready for occupancy within the next ten months. They are located close to the hospital on the new campus.

Elliot Hospital Dedication.—At the dedicatory exercises of the Elliot Memorial Hospital of the University of Minnesota, September 5, a brief notice of which appeared in THE JOURNAL of September 16, the dean, Dr. Frank F. Wesbrook, Minneapolis, presided. Address was made by president George Edgar Vincent, president of the University of Minnesota; the history of the hospital movement was described by Dr. James E. Moore; Frank M. Elliot spoke on the endowment of the Elliot Memorial Hospital. E. L. Carpenter responded for the donors of the hospital site; Dr. Charles Lyman Greene gave an address on "Educational Value of the University Hospitals;" Drs. Rollo C. Dugan, Eyota; Frank H. Alexander, Barnesville; Edward L. Tuohy, Duluth, responded for the alumni of the university hospitals; Dr. William J. Mayo, Rochester, considered the university hospitals as an economic asset of the state, and Dr. Richard Olding Beard, Minneapolis, spoke on the Training School of Nurses of the University. The cornerstone of the Institute of Anatomy was laid, after which the memorial tablets were unveiled and the keys of the hospital were delivered to the superintendent by President Vincent. The superintendent of the hospital, Dr. S. B. Baldwin, then escorted the visitors through the building.

NEW YORK

Industrial Poisonings to be Reported.—The State Department of Health has called the attention of local health boards to the fact that section 58 of the labor law became a law June 6, and went into effect September 1. This law requires that every medical practitioner attending on or called in to visit a patient whom he believes to be suffering from poisoning from lead, phosphorus, arsenic or mercury or their compounds, or from anthrax, or from compressed-air illness, contracted as a result of the patient's employment, shall send to the Commissioner of Labor a notice stating the name of and full postal address and place of employment of the patient and the disease from which, in the opinion of the medical practitioner, the patient is suffering, with such other and further information as may be said to be required by the said commissioner. If any medical practitioner, when required by this section to send a notice, fails forthwith to send the same, he shall be liable to a fine not exceeding $10. It shall be the duty of the Commissioner of Labor to enforce this section and he may call on the state and local boards of health for assistance. This is the first law of this nature to go into effect on this side of the Atlantic.

New York City

Special Meeting of Society.—The Eastern Medical Society of New York held a special meeting at the Academy of Medicine September 20, at which Dr. Albert A. Gray, Glasgow, Scotland, was a special guest of the society and delivered an address.

Old Ferryboat Becomes School.—The Committee for the Prevention of Tuberculosis has obtained a loan of the old ferryboat *Rutherford* and has had it fitted up as a school for tuberculous children. Here the children do all their school work and have their meals in the open air and there are also some accommodations for older patients. A physician and nurses are in constant attendance.

Monthly Bulletin a Success.—Although this publication has only been in existence about a year the edition has already been enlarged twice and a still larger edition is now contemplated. It is hoped eventually that a copy of the bulletin may be sent to every physician in the city and to teachers, clergymen and social workers as well. Applications for the bulletin may be made to the editor of the *Monthly Bulletin of the Department of Health*, Fifty-Fifth Street and Sixth Avenue.

Buffalo

Ask Appropriation for Indigent Tuberculosis Patients.—The health commissioner has asked the city to appropriate $1,200 for the care of indigent patients suffering from tuberculosis. This money is required for eggs, milk and other supplies.——The department of health has recently appointed six nurses to do field work in tuberculosis. This work was formerly carried on by the district nurses, but the city has decided to take charge of this work.

NORTH CAROLINA

Personal.—Dr. Wyatt P. Exum, Goldsboro, is reported to be seriously ill at his home.——Dr. David A. Stanton, John T. Burrus, William M. Jones, William J. McAnally and James R. Reitzel have been elected members of the board of health of High Point.

Municipal Laboratory Recommended.—At a meeting of the board of health of Asheville, September 14, it was decided to recommend to the aldermanic board that $5,000 be appropriated for the establishment of a city laboratory of which L. M. McCormick, chief of the sanitary department, is to be in charge.

OHIO

Clinic for Children in Dayton.—A clinic for the treatment of children under 3 years has been established by the Dayton Flower and Fruit Mission. The clinic is to be conducted every Monday, Wednesday and Friday afternoon, and will be in charge of Dr. Alvin L. Light.

Child Hygiene Bureau Organized.—At an open meeting of the board of health of Cleveland, September 7, the organization of a bureau of child hygiene was perfected with the appointment of Dr. Henry J. Gerstenberger as chief of the bureau, and Drs. Fred Beekel, Carlos E. Pitkin, Richard L. Jett, C. F. Zantiny and Alvin S. Storey, in charge of the five dispensaries now in operation.

Personal.—Dr. Clayton B. Conwell, Cincinnati, has resigned as superintendent of the Ohio State Sanatorium for Tuberculosis, Mount Vernon, and will practice in Cincinnati.——Dr. Asa C. Messenger has been reelected dean, and Dr. Clark M. Galloway, Xenia, secretary of the volunteer medical and surgical staff of the Ohio Soldiers' and Sailors' Orphans' Home, Xenia.——Dr. Russell H. Wilson, Martins Ferry, has been appointed chief surgeon for the United Fruit Company's hospital at Bocas Del Toro.——Dr. Sterling B. Taylor, Columbus, who has been ill in Mount Clemens, Mich., is reported to be improving.——Dr. Albert G. Henry broke two ribs and sustained internal injuries by a falling wall during a fire in North Baltimore, September 9.

OKLAHOMA

Free Antitoxin.—The State Health Department announces that the free distribution of diphtheria antitoxin to those who are unable to purchase it will soon be commenced.

Personal.—Dr. John O. Butler, Crescent, is reported to be seriously ill with typhoid fever.——Dr. R. R. Smith, assistant city physician of Muskogee, was operated on for appendicitis in Kansas City recently.——Dr. William E. Dicken has succeeded Dr. John W. Riley, resigned, as city physician of Oklahoma City.

PENNSYLVANIA

Dispensary Buys Farm.—The Kensington Dispensary for the Treatment of Tuberculosis has purchased the Lennig farm in Upper Providence township, at an expense of nearly $7,000. The farm contains 141 acres and will be used by the dispensary in its work against tuberculosis.

Official Organ of Medical Society Appears.—The *Dauphin County Medical Academician*, the official organ of the Dauphin County Medical Society and the Harrisburg Academy of Medicine, made its first appearance September 13. The magazine is to be issued on the fifteenth day of each month, and its office of publication is at the Harrisburg Academy of Medicine Building.

Personal.—Dr. Clifton Guy Hughes, Punxsutawney, sustained severe injuries when his automobile was caught between two street cars moving in opposite directions, September 14.——Dr. Charles Long, Altoona, was tendered a banquet and presented with a handsome pipe by a number of his friends, on the occasion of his 70th birthday anniversary, September 12.——Dr. William Le Roy Marks has been appointed resident physician to the Carnegie Technical Schools, vice Dr. Walter B. Orbin, Pittsburg, resigned.

Memorial Hospital Opened.—The J. C. Blair Memorial Hospital, Huntingdon, opened its doors for patients on September 4. Drs. Francis P. Ball, Lock Haven, and Theodore L. Chase of Philadelphia, delivered addresses. Dr. George G. Harman, Huntingdon, was chosen president of the staff and Dr. Harry B. Fetterhoof, secretary.

Receipts of Tuberculosis Day.—Clerks of the Pennsylvania Trust Company and officers of the Berks County Tuberculosis Society have finished opening envelopes and counting the contents, received on Tuberculosis Day for the maintenance of the Neversink Mountain Tuberculosis Sanatorium. Although a number of envelopes are yet to be received, the total reached $5,944.85.

Censorial District Meeting.—The eighth annual meeting of the Sixteenth Censorial District of the Medical Society of the State of Pennsylvania which includes Montour, Snyder, Northumberland, Columbia, was held at Selinsgrove, September 8. Dr. John B. Cressinger, Sunbury, was elected president, and Dr. Luther B. Kline, Catawissa, secretary. Danville was selected as the next place of meeting.

Philadelphia

School Campaign Against Tuberculosis.—The Pennsylvania Society for the Prevention of Tuberculosis has placed its winter campaign of antituberculosis education among the children of the public schools of Philadelphia, which opened September 11, in charge of Dr. Howard Fussell, special demonstrator and lecturer of the society. Dr. Fussell has a tuberculosis exhibit which he will establish at each school, devoting from one to two weeks to a school. The exhibit consists of photographs, pictures and charts, and, in addition, Dr. Fussell delivers talks on hygiene to the children in the various rooms of the schools.

Institute of Anatomy Dedicated.—The dedication of the Daniel Baugh Institute of Anatomy of the Jefferson Medical College was observed with appropriate ceremonies, September 26. Dedicatory addresses were made by Hon. William Potter, president of the board of trustees and Dr. Edward Anthony Spitzka, professor of applied anatomy. At the same time the portrait of Mr. Daniel Baugh, the donor of the building with all modern appliances, was presented by the board of trustees and placed in a conspicuous position in the new institute. Hereafter, the teaching of anatomy and its allied sciences will take place in this building.

Personal.—The following physicians have returned from Europe: Drs. William M. L. Coplin, George Strawbridge, William L. Rodman, James E. Talley, Thomas A. Cope, J. William White and Dr. and Mrs. J. Cardeen Cooper.——Dr. Francis R. Packard was recently elected president of the Board of Medical Examiners, vice Dr. Henry Beates, Jr., resigned.

TENNESSEE

Compulsory Typhoid Vaccination.—Dr. Max Goltman, health commissioner of Memphis, issued an order, September 11, directing that all health department employees under 45 years of age, be vaccinated, as a preventive against typhoid fever.

Personal.—Dr. William Likley Simpson, Memphis, has gone to Europe.——Dr. John Black Steele, assistant city physician of Chattanooga, has been elected city physician, vice Dr. Philander D. Sims, resigned, to accept the position of physician in charge of contagious diseases under the joint board of health of the city of Chattanooga and Hamilton County. ——Dr. Ruel E. Bartlett, Nashville, physical director of the Memphis Y. M. C. A., has retired.

TEXAS

Personal.—Twenty members of the Dallas County Medical Society attended a banquet, September 2, in honor of Drs. Thomas B. Fisher and Albert W. Nash, the retiring and incoming health officers, respectively, of the city. Dr. James M. Martin acted as toast-master. Dr. Nash entered on his duty as health officer, September 1.——Dr. Adam J. Beall, San Marcos, physician of Hays County, was thrown from his buggy recently, fracturing his clavicle.——Dr. John D. Mitchell, Fort Worth, fractured a rib, August 30, in a violent sneeze.

VIRGINIA

Personal.—Dr. L. W. White has been elected city physician of Suffolk.——The friends of Dr. Charles V. Carrington, Richmond, physician at the state penitentiary for the last twelve years, are making a strong campaign for his reappointment.——Dr. J. Milbourne Daugherty, Nicklesville, has been reinstated as postmaster.

Physicians Register.—The State Department of Health in its bulletin for September, issued a complete register of the physicians practising in Virginia, by districts, counties and cities; and also gave a list of the county boards of health appointed by the State Board of Health, on July 11 of this year. The value of the register would be greatly increased if an alphabetical list had been appended.

GENERAL NEWS

Southern Medical Association Meeting.—The Southern Medical Association will hold its annual meeting in Hattiesburg, Miss., November 16-18.

Clinicians to Meet.—The second annual meeting of the clinical Congress of Surgeons of North America will be held in Philadelphia, November 7-16. Literary sessions will be held every evening and clinical programs will be conducted throughout the day at the various hospitals in the city.

Societies to Meet.—Among coming society meetings in October are the following:

American Association of Railway Surgeons, Chicago, Oct. 18-20.
Delaware State Medical Society, Lewes, Oct. 10.
Idaho State Medical Association, Boise, Oct. 11-13.
Kentucky State Medical Association, Paducah, Oct. 24-26.
Medical Assn. of the Southwest, Oklahoma City, Okla., Oct. 10-12.
Medical Society of Virginia, Richmond, Oct. 24-27.
Minnesota State Medical Association, St. Paul, Oct. 5-6.
Mississippi Valley Medical Association, Nashville, Tenn., Oct. 17-19.
Nevada State Medical Association, Reno, Oct. 10-12.
Utah State Medical Association, Salt Lake City, Oct. 4-5.
Vermont State Medical Society, Burlington, Oct. 12-13.

Military Surgeons Elected.—At the twentieth annual meeting of the Association of Military Surgeons of the United States, held in Milwaukee, September 26-29, the following officers were elected: president, Surgeon Charles P. Wertenbaker, United States Public Health and Marine-Hospital Service; vice-presidents, Surgeon W. C. Braisted, U. S. Navy, Brigadier-General Charles Adams, Surgeon-General of Illinois, and Colonel Jefferson Randolph Kean, Medical Corps, U. S. Army; treasurer, Major Herbert A. Arnold, N. G. Penn. (reelected). Baltimore was selected as the next place of meeting.

Sprague Mercantile Agency.—In the past four or five years THE JOURNAL has received letters from physicians, complaining of the methods of the Sprague Mercantile Agency, Chicago. The general opinion seems to be that the membership fee which this concern exacts is the most important part of the contract—to the agency. A physician wrote recently, stating that while this collection agency had had his money for thirteen months it had not collected a dollar. This complaint is typical of others that have been received. THE JOURNAL would like to hear from other physicians who have had any experience with the Sprague Mercantile Agency.

American Hospital Association.—This organization held its thirteenth annual meeting in New York City, September 19-22. The opening address was made by Mr. George McAneny, president of the Borough of Manhattan who took the occasion to criticize the divided system of hospital supervision existing at present in New York and to recommend greater centralization. Dr. Abraham Flexner made an address on the relation of the hospital to the medical school and suggested questions which he thought hospital managers ought to ask medical schools which sought clinical facilities in their wards. In addition to the scientific work there were several exhibits of interest, in one of which, called the "Chamber of Horrors," was shown the mistakes of nurses and a list of "dont's" for future guidance. Another exhibit was one of occupations for convalescing patients of all ages and still another demonstrated a plan of social service work for the purpose of helping those too well to remain in hospitals and too sick to go back to active labor. The visiting physicians spent considerable time in inspecting the hospitals in this city and the opinion was expressed that hospital conditions here were better than in Canada or Great Britain.

FOREIGN NEWS

The Next International Congress of Gynecology and Obstetrics.—At the Fifth International Congress, which met at St. Petersburg last year, Berlin was selected as the place for the next congress, in 1912, and the date has been definitely fixed as May 29 to 31. Prof. E. Bumm was appointed president; he is at the head of the committee of organization, composed of Profs. Döderlein and A Martin of Germany, D. von Ott of Russia and Mangiagalli of Italy. The general secretary is Dr. E. Martin, 18 Artilleriestrasse, Berlin. The chief topic to be discussed is "Peritonization."

Festschrift for Hansen.—G. A. Hansen, president of the permanent international committee on leprosy, was one of the founders of the *Medicinsk Revue* in Norway in 1884. On the occasion of his 70th birthday recently, the *Revue* issued a special *Festschrift* number in his honor with fifteen able articles on various live topics, especially leprosy and pellagra, all by Norwegian writers. Laache reports a case of sudden death from asphyxia after a mere exploratory puncture, and Holst discusses the scorbutic symptoms observed in pellagra. Each article is accompanied by an abstract in German.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Sept. 16, 1911.

Motor Noises at Night

The nuisance from the noises made by motor cars has become intolerable. Human ingenuity has exhausted itself in devising apparatus for the emission of all sorts of unearthly noises far in excess of what is necessary to prevent accidents. Some drivers employ the device known as the "cut out" which makes a continuous and harassing noise. Others use electric devices for intensifying the notes of their horns. Others use a siren or multiple horn making distracting, irregular noises. In certain parts of London the night is made hideous by the Babel, rendering sleep difficult or impossible. In a letter to the *Times* an eminent surgeon, Sir Henry Morris, points out the evil results on himself and other residents in the West End. After the lull which midnight brings and after an hour or so of sleep one is aroused in the early morning by the fearsome sounds of the motor horn. "They strike the ear," he says, "bruise the brain, much as a hot and vivid flash of light affects the eye, or the plunge of a knife hurts the flesh." A bill has been introduced into parliament to amend the law in respect to the warning instruments on motor cars. With the concurrence of the local government board, the commissioner of the Metropolitan Police has issued a circular pointing out that while drivers are bound to give audible warning with a view to preventing accidents, they go far beyond this and at night in streets where there is no hidden danger, and the only danger is reckless speed, they endeavor to prevent the possible consequences of this by continuously and obnoxiously sounding their horns, disturbing the rest of residents. Unless some alteration is brought about by motorists of their own impulse he warns them that repressive legislation will be introduced.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Sept. 1, 1911.

Aid for the Blind

Books with raised letters used by the blind are generally very expensive. They have, up to the present time, been of two distinct types: (1) those which were stereotyped, the manufacturing process being so expensive that frequent printing of new books is made almost impossible; (2) those written by hand by some blind person whose good will does not prevent him from making frequent inaccuracies, and who can make but one copy at a time, and that only slowly. Now, as I have indicated in a preceding article in THE JOURNAL (Sept. 17, 1911, p. 1036), M. Ernest Vaughan, the director of hospice des Quinze-Vingts, has devised a press for printing books for the blind by means of which a text of irreproachable exactness can be obtained, and at a cost much less than that of either the stereotyped or the hand-written books. To place this system on the market, he has founded the Société philanthropique d'impressions pour les aveugles, of which the celebrated writer, Anatole France, member of the Académie Française, is president.

What this society proposes to do is this: (1) to provide the blind workers with books on technical subjects—necessary information in the following of their professions—catalogues, references and all the practical information which will enable them to fill positions commanding salaries as large as those drawn by workers who have the use of their eyesight; (2) to establish free district libraries where the blind people can find the means of educating or amusing themselves, in the same way that those who can see may do; (3) to publish and sell books and music for the use of the blind, at the most moderate prices; (4) to give advice to any of them, and particularly to the workers, who will find them willing to give any help which they may need—except money aid, which they make it a practice never to give; (5) and lastly, to propagate M. Vaughan's method, or any other similar method, for printing books for the blind.

The first effort of the society will expend itself on the printing of technical books, which will be sold at a minimum price, or even furnished gratuitously to the extremely poor persons, as the resources of the society permit.

As soon as the number of subscriptions warrant it, centers will be established in the provinces to attract future libraries there. At Marseilles, Dijon, Lyons, Tours, Arras and Lille groups of people are offering quarters and the necessary personnel. The committee of patronage, which is disinterestedly devoting itself to launching the Société philanthropique d'impressions pour les aveugles combines many personalities and different philosophic and political opinions.

The Druggist's Bottle as Agent of Contagion

In most French pharmacies one can return, for a cent or two, bottles, jars and other receptacles. The chances of infection are easy to calculate. Inasmuch as the druggists are not obliged to sterilize the returned receptacles, the only practical means of remedying the evil would be in the refusal of the druggist to take back used bottles. Unfortunately, the druggist does not dare to do this, for the customers, to gain a few pennies, will go to some other druggist. In certain towns, as *La Pharmacie Française* informs us, the druggists have agreed to refuse the return of bottles altogether. A propaganda is now being carried on to have druggists and the public everywhere renounce the practice in question.

A New Responsibility for Physicians

It happens all the time that the country doctor is asked by his patients to bring in his carriage the messenger, who has, in order to gain a little time which may be very precious, come to town after him. The doctor rarely refuses to render such a service. Now it follows, according to several recent decisions, that by so doing he assumes responsibility for the safety of his companion during the trip, and that if an accident occurs in which the latter is injured, the doctor is obliged to bear the consequences.

The Death of Dr. Bruandet

Word has been received of the death of Dr. Louis Bruandet, professor of anatomy at the medical school at Reims. Dr. Bruandet, who was 35 years old, was a victim of his professional duty. Shortly before he left for his vacation, he attended a patient suffering from malignant anthrax, contracted the disease himself, and died soon afterward.

Sources of Cholera

At the last meeting of the permanent commission of the superior counsel of hygiene, Dr. Calmette read his report on the sanitary situation in the city of Marseilles. The result of his investigation was that the origin of the cases of cholera observed in this city, is to be traced not to the water or to the milk, but to shellfish, either those imported from the neighboring towns themselves contaminated, or those gathered on the rivers, in streams or in falls. These shellfish, which are eaten raw, are often filled with vibrios. This explains the isolated cases of cholera which attack an individual or a single family in a certain district. Dr. Calmette demands laws in Marseilles and all along the Mediterranean coast, prohibiting the gathering, sale or importation of shellfish.

The Country Neurasthenic

Dr. Raymond Belbèze, a physician in one of the provinces, who has for some years made a study of several communes in the department of Tarn-et-Garonne, has just published a little book under the title "The Country Neurasthenic," which shows that in this particular district, 30 per cent. of the peasants are subject to neurasthenia, and that this percentage increases yearly. According to Dr. Belbèze, the depopulation, which is particularly rapid in Tarn-et-Garonne (having amounted to 40,000 between 1842 and 1899) is closely related to the increase of neurasthenia there and is explained, among other reasons, by a morbid fear of family responsibility; the numerous and early marriages being almost without exception voluntarily sterile after the birth of the first child. Dr. Belbèze considers that in addition to the economic factor (Tarn-et-Garonne has become greatly impoverished during the last few years) and the social factor (the enervating effect of academic and domestic education) the causes of this neurasthenia are to be found in the prevalence of overwork, inadequate nourishment, and above all in the close blood relationship which exists between the people, for the inhabitants have intermarried for more than a century.

The Public First-Aid Service of Paris

Professor Thoinot has just published his report for the year 1910 of the public first-aid service of Paris, of which he is the director. It is organized to render aid in various public places and on occasions of public gatherings, in cases of illness, accident, confinement, drowning and violent and natural deaths. Professor Thoinot reports that in the course of 1910, the public service department aided 1,670 people, of which number 321 were submerged, as compared with 1,526, of which 352 were submerged, in 1909. Of these 321 submerged persons (242 men and 79 women) 132 were suicides; 154 were suicides in 1909. Of these 232 remained under the water less than one minute; 33, two minutes; 27, from three to five minutes; 4, from six to ten minutes; and three more than ten minutes. The last three could not be resuscitated. In the stations of aid in the mayor's offices, 268 wounded and 12 sick people were cared for. Stretchers from the different posts have been used to carry those injured in the public streets to the morgue, to the hospital, or to their homes. The organization looked after 50 sick and 12 wounded at the carnival, 50 wounded and 70 sick at the national fête, July 14.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Sept. 7, 1911.

Personals

On the occasion of the centennial jubilee of its foundation, which was celebrated, September 2, the medical faculty of Christiana, gave the honorary title of doctor to Professor Rubner, Professor Rabl of Leipsic and Professor v. Strümpel of Leipsic.

A new chair has been established at Tübingen for skin and venereal diseases and Professor Linser has been appointed the incumbent.

The Distribution of Persons Engaged in the Treatment or Care of Disease in the German Empire

In accordance with a resolution of the federal council (*Bundesrat*) in 1909, an investigation as to the distribution of persons engaged in the treatment of disease, of pharmacies and of persons engaged in pharmacy and nursing in the German empire, was undertaken May 1, 1909. From the results just published by the imperial health office, the following state-

ments are taken: The number of licensed physicians of the German empire has increased by 23.59 per cent. since 1898, the total now being 30,558. The number of physicians connected with institutions has increased at the rate of 60.1 per cent. in contrast with the percentage increase of 20.28 among physicians who do private practice. The large cities show the greatest increase, while in the relatively smallest communities a retrogression can be shown. Generally the public in large cities is four times as richly supplied with physicians as the people of the smallest communities.

The number of professional nurses has nearly doubled in the last eleven years, reaching the number of 68,818. They are classified as domestic (20,026) and institutional (48,792), also as recognized by the state (23,681) and not recognized by the state (45,075), and finally into association nurses and others. The relatively greater participation of the male sex in the entire increase among nurses is not to be denied. The Roman and evangelical sisterhood nurses form respectively 48.3 and 29.2 per cent. of the association nurses.

The persons engaged in the professional treatment of the sick who are not licensed, are equal in number to 17.1 per cent. of the number of physicians in private practice. Altogether they number 4,468, and since 1887 have experienced an increase of 160.8 per cent. and the non-licensed medical women have increased to the extent of 333.4 per cent., as contrasted with the non-licensed men who have increased by 123.4 per cent. The group of midwives has receded in proportion to the population from 7.72 in 1876 to 5.94 per 1,000; this corresponds with the decrease in the birth-rate. The licensed veterinary surgeons have increased since 1887 from 3,113 to 3,813, and 69.7 per cent. of all veterinary surgeons are engaged in the official inspection of cattle and meat.

With reference to pharmacists, the statistics show that a relative decrease has occurred, for in 1895 there were 0.99 pharmacists for every 10,000 inhabitants, in 1909, 0.97.

Cerebrospinal Meningitis in Prussia in 1910

In 1910 there were officially reported 369 cases of cerebrospinal meningitis as opposed to 1,030 in the year 1909. Of these thirty-seven cases were shown to belong to other diseases of the brain and in twenty-four cases the diagnosis was doubtful. Most of the cases occurred, as in the previous year, in the provinces of Düsseldorf, Arnsberg and Oppein. According to season, the largest number of cases occurred, as in the previous year, in spring and winter; 60 per cent. were of the male sex, showing again a preponderance over the females. As to the age they were generally children from 6 to 10 years. Of the patients 136 had recovered at the end of 1910 and 194, or about 60 per cent., had died. Death occurred most frequently in the first week, namely, in seventy-two cases. Of 136 who recovered, so far as facts are available, only two cases of permanent injury to health remained, namely, deafness. The diagnosis was generally confirmed by bacteriologic examination. According to the reports, forty-one patients had been treated with meningitis serum; of these twenty-three recovered and twelve died.

Reduction of the Excess of Females in Prussia

In almost all European countries the female sex has for a long time outnumbered the male; only in the East do the men exceed the women in number. This has been numerically determined in Roumania, Servia, Bulgaria and Greece. In Turkey the sexes are not separated in the census, but it is certain that there also the male sex is predominant. The reason for this difference is partly to be found in the greater tendency of men to shift about from place to place. Only when exact facts are obtainable with reference to the sex at birth can it be determined how far the greater or less neglect of one or other sex, especially during the period of infancy, is responsible for the varying distribution. In Germany there are annually about 60,000 more boys born than girls. In spite of this, for various reasons, the female sex outnumbers the male to a marked degree. But there is one peculiar fact, namely, that in the last census period, the excess of females over males in Germany has diminished. If this ratio continues, in thirty years or less the sexes will be equal in numbers. At present there are for each 1,000 persons, 506 women and 494 men. If it is assumed that there is a general variation in favor of the male sex, it may be explained by a lesser tendency of the men nowadays to emigrate, and by the number of persons who have moved to Prussia from elsewhere in the empire. Still another factor is the gratifying lowering of the infant death-rate, to which the male sex, in consequence of its larger proportion, contributes to a greater extent than the female.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Sept. 23, 1911.

A Technical Museum with a Medical Department

Some time ago a private committee organized to erect in Vienna a permanent technical museum. The government not only granted a large sum of money but also caused the technical schools to donate appropriate subjects to the museum. One of the divisions will be devoted to public health, medicine in general, and sanitation, and men of the profession all over the world are invited to contribute any object they might think of value for this institution. A museum of this kind will undoubtedly be equally interesting to the general practitioner, the medical student and the public health official. The committee has already been offered a number of old medical instruments, mixtures, laboratory and pharmacy outfits, including a handsome collection of quack remedies, the compositions of which are analyzed and exhibited. The sanitary exhibit will include the technical details of pure food- and water-supplies, methods and apparatus for the removal of town garbage and waste, filtering-beds and smoke-abating contrivances, and also apparatus and outfits for first aid to the injured, especially in the case of railway accidents, coalmine explosions, and injuries received in war. The cooperation of medical experts will ensure a proper selection of the exhibits offered.

Protection of Laborers in the Sugar Factories and the Printing Trade

Two ordinances of the ministry of public works, dealing with the conditions in the sugar industry and the printing trade, have an important bearing on the health of a large percentage of the laboring class. These regulations are the outcome of inquiries by a special accident commission and are in strict harmony with the special progress of work in the two mentioned lines of industry. In the sugar industries, precautions to be taken and means necessary for prevention of scalding, cauterizing, poisoning or producing of dangerous dust are enumerated. A periodic regular examination of apparatus which are deemed especially dangerous (recipients, centrifuges, etc.), is made compulsory, and hygienic precautions for the protection of the consumers of the sugar are also added. The regulations concerning the printing trade are directed chiefly against the dangers of lead-poisoning. Thus the minimum of volume of air per laborer has been fixed proportionally with the richness in lead dust in the various industries; proper ventilation is made compulsory. The walls and floors of the workshops must be cleaned at least twice a week and subterranean work-rooms are not allowed at all where lead is used. Female and juvenile workers may not be employed for certain kinds of labor involving great exposure to the risk of lead-poisoning. Colors containing lead must be stated as such and strict observation of the prohibition of eating, drinking and smoking while at work is rigidly enforced. One provision is that the workers in industries using lead shall be examined periodically by public health officers who will be empowered to order a person to stay away from work if found to be affected by plumbism. The readmission of such persons will be conditional on producing a certificate of health. The regulations will go into force Jan. 1, 1912, in the existing factories, and at once in those which will be erected between now and that date.

A Supply of Serum Against Serpents for the Austrian Army

The two army corps stationed in the southern districts of the empire have been provided for some time with a large amount of antitoxic serum for use in cases of soldiers being injured by serpents. The excessive heat and dryness of the temperature has caused a large increase of these inhabitants of the rocky and dry districts and especially the viper has appeared in numbers not seen before. Acting on a suggestion of the head of the army medical corps, the serum was obtained in a sufficient quantity to supply all staff hospitals in the area in question, and the regimental surgeons have received careful instructions how and when to use it. It was also necessary to provide a number of syringes required for the use of this serum. Every year a few cases of fatal injuries by vipers have been reported, mostly from the civilian population. The application of permanganate of potash in crystals to the wound was not always successful, and so the more modern method has been recommended and it will be available both for the military and civilian patients requiring it.

Miscellany

"An Example to Follow."—It is evident that the state of Louisiana has at the head of its board of health a man of unusual enterprise and originality, Dr. Oscar Dowling. He has rightly been described as not only a man of ideas, but a man of action. Reports of what President Dowling has done in and out of Louisiana show that not only has he enforced sanitation and laws of healthful living, but that he has taught their principles in an efficient and novel way. The best example of this is his famous health train, which traveled nearly seven thousand miles and visited over two hundred and fifty towns and cities in the state. Over one hundred and fifty thousand people along the line of this route visited the laboratory exhibits on the train and saw the moving-picture lectures. This educational work was so successful and valuable that Dr. Dowling took the traveling exhibit to the. . . [American Medical Association] convention at Los Angeles. . . and returned across many states, offering everywhere a demonstration of the causes and methods of cure for disease. One car had an additional exhibit showing the methods of preventing disease; a second taught how food should be prepared and guarded; a third was for the accommodation of Dr. Dowling and his assistants. The plan, in Louisiana at least, included not only education but inspection, as is shown by the following extract from a newspaper account:

"On the arrival of the train at a town, the doctor was off on his tour of inspection—a thing little known before his arrival. Without fear or favor he inspected everything, the water-supply, the treatment of sewage and the disposal of garbage, the slaughter-houses, the markets, the bakeries, the hotels, the restaurants, the schools, the jails, the sanatoria, the railroad stations; and without fear or favor he reported on them all.

"Twenty years ago such an effort to bring about right health conditions was unheard of, and any one who proposed it might have been laughed at as a dreamy theorist."—*Outlook*, Sept. 23, 1911.

Suggestions in Science.—Because every discovery becomes the basis for further study, the imagination of the investigator is constantly stimulated. New facts suggest in turn other facts and point to unsuspected relations between things that have long been known. Bayliss and Starling's discovery of a natural chemical stimulant which induces secretion of the pancreas led directly to the explanation of continued gastric secretion, and also to finding the marvelous mechanism by which the mammary glands are prepared for the giving of milk. Thus, though the interests of the man of science seem at the moment narrow and restricted, they may nevertheless lead his thought out into many diverse realms of knowledge. These excursions of the imagination offer repeated suggestions for fresh adventure. The look, therefore, is always forward to what may be seen when the next step is taken. Seeking new things becomes in time a fixed habit. Past achievements neither satisfy interest nor hold attention—they become fused with the established routine from which it is happiness to escape. The chance of beholding unsuspected wonders, or the possibility of finding that something imagined is really true is a constant incitement to further search and furnishes the zest and interest which are among the best rewards of the investigator.—Cannon in *Science*.

Roentgen-Ray Treatment of Lymphadenoma.—The *x*-rays produce a rapid diminution in the size of the glands, and it is said that life is thus prolonged. *X*-rays destroy the lymphoid tissue, but leave the fibrous tissue unaffected. It must be borne in mind that by free application of *x*-rays the lymphocytes and the healthy lymphoid tissues may be too extensively destroyed and that harm may thus be done. It has been noted that in some instances although rapid diminution in size follows *x*-ray treatment the glandular enlargement returns very rapidly when the treatment is stopped. It appears that treatment by radium would be difficult from the large amount of radium which would be required to deal with the extensive lesions.—H. D. Rolleston, in the *Practitioner*.

Marriages

HOWARD CHARLES RANDOLPH, M.D., Aberdeen, Wash., to Miss Lillian Elizabeth Burke of Ann Arbor, Mich., at Seattle, September 11.

WILLIAM C. GIBSON, M.D., Empire, C. Z., to Miss Edith M. Seymour of Petoskey, Mich., at Cristobal, C. Z., August 31.

HOWARD BULKELEY HAYLETT, M.D., Hartford, Conn., to Miss Hortense Idell Dunham of Burlington, Vt., August 31.

ARTHUR M. BISHOP, M.D., Chicago, to Mrs. Della Robbins Burnett of Good Hope, Ill., at Galesburg, August 26.

HERBERT C. CLARK, M.D., Ancon, C. Z., to Miss Jessie Sanderson of Norfolk County, Va., at Ancon, September 2.

WALDEMAR RUSCHE, M.D., Giessen, Germany, to Miss Louise W. Treide, at Baltimore, September 14.

EARL H. COLEMAN, M.D., Los Celtos, Cal., to Miss Nain Taylor of Curpentino, Cal., September 6.

ALBERT BREWER LANDRUM, M.D., to Miss Flora Esther Rohe, both of Columbus, O., June 12.

JOHN D. MACLEAN, M.D., Greenwood, B.C., to Miss Minnie Watson, at Tara, Ont., recently.

JOHN J. KERWIN, M.D., to Miss Helen Marie White, both of Chicago, September 12.

Deaths

Maurice Dwight Clarke, M.D. Harvard Medical School, 1882; of Haverhill, Mass., a member and once vice-president of the Massachusetts Medical Society; for twenty-two years secretary of the Essex North District Medical Society; formerly a member of the Haverhill (Mass.) Board of Health and a member of the local pension board; formerly consulting physician to the Danvers State Hospital; surgeon and chief of staff of the Hale Hospital, and secretary and treasurer of the Haverhill Medical Club; died in Danvers, Mass., September 7, aged 59.

Granville Wilson Tinkham, M.D. Harvard Medical School, 1871; of Weymouth, Mass.; a member of the Massachusetts Medical Society and once president of the South Norfolk District Medical Society; for several years medical examiner for the coroner of Weymouth district; died in the Boothby Hospital, Boston, September 9, a few days after surgical operation, aged 63.

George D. Crandall (license, Tioga County, Pa., 1881); a member of the American Medical Association, Erie Railroad Surgeons' Association and International Association of Railway Surgeons; surgeon of the Tioga Division of the Erie Railroad; surgeon in charge of the Cottage State Hospital, Blossburg; died at his home in that place, August 22, from appendicitis, aged 67.

Charles Cornelius Payne, M.D. University of Kansas, Kansas City, 1907; a member of the Kansas Medical Society and for a time a lecturer of the faculty of his alma mater; died at the home of his wife's mother in Lawrence, September 14, from the effects of a gunshot wound of the chest, believed to have been self-inflicted with suicidal intent, aged 38.

John Craddock Drennan, M.D. Vanderbilt University of Nashville, Tenn., 1893; state senator from the district made up of Cannon, Rutherford and De Kalb counties; died at his home in Woodbury, Tenn., September 13, from the effects of a gunshot wound, believed to have been self-inflicted with suicidal intent, aged 45.

George William Reynolds, M.D. University of Buffalo (N. Y.), 1880; Rush Medical College, 1897; for many years a member of the American Medical Association; chief of the gynecological staff of St. Joseph Hospital, Chicago; died in that institution, September 9, from chronic interstitial nephritis, aged 57.

Eugene Arthur Hults, M.D. Hahnemann Medical College, Philadelphia, 1886; from 1895 to 1898 health officer of Perth Amboy, N. J., and since May 15, 1911, health officer of the port; died at his home, September 4, from nephritis, aged 50.

Edgar M. Griffith, M.D. Cooper Medical College, San Francisco, 1876; died at his home in Boyle Heights, Los Angeles, September 7, from nephritis, aged 53.

Abraham M. Neyman, M.D. Western Reserve University, Cleveland, O., 1853; a member of the Medical Society of the State of Pennsylvania, and a charter member of the Butler County Medical Society; died at the home of his daughter in Butler, September 16, from senile debility, aged 65.

Elmer Wallace Hamilton, M.D. Jefferson Medical College, 1907; a member of the American Medical Association; of Newtown, Pa.; formerly a member of the staff of the New Jersey State Epileptic Colony, Skillman; died in a hospital in Philadelphia, September 1, aged 32.

Alton D. Du Puy, M.D. University of Louisville (Ky.), 1886; for twenty years a practitioner of San Antonio, Tex.; for twelve years chief surgeon of the International and Great Northern Railroad; died at his home, September 8, from heart disease, aged 48.

D. O. Fruth, M.D. Columbus (O.) Medical College, 1879; of Los Angeles, Cal.; a practitioner of Chicago until 1897, and again from 1903 to 1909; died at the home of his sister near Fostoria, O., September 13, from disease of heart and kidneys, aged 55.

John W. Ballard, M.D. Medical College of Ohio, Cincinnati, 1879; for thirty-five years a practitioner of Logansport, Ind., and for three terms coroner of Cass County; died at his home in Logansport, September 9, from cerebral hemorrhage, aged 56.

Thomas Richard Ward, M.D. State University of Iowa, Iowa City, 1873; Bellevue Hospital Medical College, 1882; surgeon to the Swedish Hospital, Omaha; died suddenly at his home in that city, September 10, from heart disease, aged 64.

Clarence Cullens, M.D. Kentucky School of Medicine, Louisville, 1871; a Confederate veteran; probate judge of New Albany County for one term; died at the home of his sister in Pontotoc, Miss., September 8, from bronchitis, aged 69.

Leonard Chester Backus, M.D. University of Michigan, Ann Arbor, 1887; a member of the Ohio State Medical Association; formerly of Fayette, O.; died at his home in Ann Arbor, Mich., September 8, from ptomain poisoning, aged 50.

J. H. Smith, M.D. Atlanta (Ga.) Medical College, 1877; for several years president of the Iowa Farmers' Insurance Company, Cedar Rapids, with a winter residence in Orlando, Fla.; died at his home in Cedar Rapids, August 30.

Edward Desmond, M.D. Tulane University, New Orleans, 1906; of Spokane; a member of the Washington State Medical Association; died in the Sacred Heart Hospital, Spokane, September 11, from typhoid fever, aged 41.

Elisha Sergeant Athearn, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1865; formerly of Oberlin, Kan., and North English, Ia.; died at his home in Boulder, Colo., September 4, from senile debility, aged 76.

Oliver H. Arnold, M.D. Harvard Medical School, 1867; for a time connected with Brown University, Providence, R. I. in the department of biology and comparative anatomy; died at his home in Providence in June, aged 70.

William Francis Pier, M.D. Bellevue Hospital Medical College, 1878; of Avoca, Pa.; formerly coroner of Luzerne County, and a school director; died at his summer home in Elmhurst, September 5, from diabetes, aged 55.

William Henry Viney (license, Massachusetts, years of practice, 1894); surgeon of New York Volunteers during the Civil War; a Forty-Niner; died at his home in Springfield, Mass., September 8, aged 85.

Walter Sullivan Holladay (license, Marion County, Ala., 1888); for ten years a member of the board of censors of the Marion County Medical Society; died at his home in Hamilton, September 7, aged 59.

Gabriel Miesse, M.D. Eclectic Medical Institute, Cincinnati, 1847; a pioneer practitioner of Lancaster, O.; died at the home of his cousin at Columbus, O., September 11, from heart disease, aged 75.

Robert P. Keesee, M.D. Leonard School of Medicine, Raleigh, N. C., 1901; a member of the National (Colored) Medical Society; died at his home in Annapolis, Md., August 26, from appendicitis, aged 32.

Phoebe E. Harding, M.D. (license, Ohio, years of practice, 1896); for more than forty years a practitioner; died at her home in Marion, O.; May 29, 1910, from cerebral hemorrhage, aged 66

William Nelson Fry, M.D. University of Vermont, Burlington, 1887; a member of the Iowa State Medical Society; died at his home in Marcus, September 12, from cerebral hemorrhage, aged 46.

Andrew Jarritte Pool (licensed, Arkansas, 1903); for thirty-eight years a practitioner of Georgia, Texas and Arkansas; died at his home in Mena, Nov. 30, 1910, from cerebral hemorrhage, aged 59.

William Fritchey Roth, M.D. Hahnemann Medical College, Philadelphia, 1878; of Manheim, Pa.; died in St. Joseph's Hospital, Lancaster, Pa., September 3, from intestinal obstruction, aged 55.

Benjamin W. Stauffer (license, Lebanon County, Pa., 1881); for nearly sixty years a practitioner of Campbelltown; died at his home in that place, September 10, from senile debility, aged 85.

Robert Chambers Moorehead, M.D. Baltimore (Md.) Medical College, 1886; formerly of Washington, Pa.; died suddenly at his home in Pitcairn, September 7, from heart disease, aged 57.

James M. Fry, M.D. Kentucky School of Medicine, Louisville, 1876; a Confederate veteran; died at his home in Wills Point, Tex., September 10, from cerebral hemorrhage, aged 60.

Dugald Leitch McAlpine, M.D. University of Toronto (Ont.), 1863; of Vancouver, B. C.; died in that city, April 24, from the effects of a street car accident four years before, aged 76.

Endyman F. Graham, M.D. University of Tennessee, Nashville, 1891; of Marietta, Okla.; a member of the Oklahoma State Medical Association; died in Chicago, September 5.

Tolman F. Andress, M.D. (license, Kansas, 1901); an eclectic practitioner for forty-three years; died at his home in Liberty, Sept. 10, 1910, from valvular heart disease.

Francis Milton Cragin, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1860; died at his home in Norwood, Mass., in June, from heart disease, aged 77.

John N. Jones, M.D. University of Buffalo (N. Y.), 1898; for two terms coroner of Chemung County, N. Y.; died at his home in Erin, September 5, aged 38.

Eugene F. Rink, M.D. Hahnemann Medical College, Philadelphia, 1877; died at his home in Burlington, N. J., September 6, from heart disease, aged 60.

Archibald A. Strange, M.D. University of Louisville (Ky.), 1889; died recently at his home in Burkesville near Martinsburg, from senile debility, aged 70.

Arnold Carpenter Davis, M.D. Hahnemann Medical College, Chicago, 1881; died at his home in Farina, Ill., Sept. 15, 1910, from acute enteritis, aged 71.

Henry T. Whiting, M.D. Chicago Homeopathic Medical College, 1883; died in his office in Rockford, Ill., September 13, from acute gastritis, aged 73.

Lawson Rosencrans Robinson, M.D. Kansas City (Mo.) Medical College, 1892; of Kansas City; died in Hot Springs, Ark., September 9, aged 49.

Mark W. Allison, M.D. University of Nashville (Tenn.), 1860; died recently at his home near Whitaker, Tex., from nephritis, aged about 75.

Alexander A. Watts, M.D. Savannah (Ga.) Medical College, 1856; died at his home in Montezuma, Ga., in July, from valvular heart disease.

William M. Flowers, M.D. Tulane University, New Orleans, 1880; died at his home in Florence, Miss., September 4, from uremia, aged 55.

George W. Lane, M.D. Atlanta (Ga.) College of Physicians and Surgeons, 1900; died at his home in Helena, Ga., in November, 1910.

John Search Newton, M.D. Jefferson Medical College, 1867; died at his home in Cedarcreek, Ark., in November, 1910, aged 67.

Daniel Stevens, M.D. Bennett Medical College, Chicago, 1878; died at his home in Fairfield, Neb., September 1, aged 74.

John Kubus (license, Pennsylvania, 1908), of Braddock, Pittsburgh; died recently in Kars, Germany, aged 37.

Mason Thomson, M.D. Bellevue Hospital Medical College, 1876; of New York City; died July 6.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION.

THE BIO-ASSAY OF EPINEPHRIN PREPARATIONS

Report of the Council on Pharmacy and Chemistry

The variable quality of epinephrin preparations having been brought to the attention of the Council on Pharmacy and Chemistry, a committee was appointed to determine means of securing uniformity of composition in these products. In particular the committee was to study the keeping qualities of epinephrin solutions and to propose a uniform method for the valuation of preparations depending for their activity on the blood-pressure-raising principle of the suprarenal gland. The report of this committee was submitted to the Council's Committee on Pharmacology and after discussion was adopted by the Council. Its publication having been authorized, it appears below:

W. A. PUCKNER, Secretary

The experiments of Reid Hunt, of Sollmann & Brown, and of W. H. Schultz have shown that the various commercial samples of epinephrin solution differ considerably in activity. It may fairly be assumed that these variations are not due to any intentional difference in composition, but may be attributed, in part, to the spontaneous deterioration with age and exposure and in part to different methods employed in standardizing the solutions at the factory.

THE SELLER OF IMPURE FOODS: "YE'RE OUT FOR THE COIN AS I AM. I SHOULD THINK THIS LINE WOULD ATTRACT YOU. A GOOD PROPOSITION, BIG MONEY AND LITTLE RISK"
SECOND STORY MAN: "WELL VE SEE. ITS THIS AWAY. ME IDEALS WOULDNT STAND FOR POISONING LITTLE KIDS AND DE LIKE."

Deterioration would naturally depend on the preservative used and on the conditions to which the sample has been exposed. Until the influence of these is better known, it would not be fair to set an age limit. It is better to rely on occasional standardization of samples bought in the open market; and it is herewith recommended that arrangements be made to this end. A variation of 15 per cent. from the claimed strength might be permitted without detriment to the public, and with fairness to the manufacturers. It is highly desirable, however, that manufacturers stamp the age of manufacture on the container, to guard against samples which are obviously over-aged.

As regards the method of standardization there seems to be universal agreement that the preference should be given to the blood-pressure method, the principle of which was first published by E. M. Houghton. In order that different observers may obtain uniform results by this method, certain details must be observed rigorously, while others may be left to the discretion of the experienced experimenter—and only such should undertake bio-assays. The subjoined method has been elaborated to unify these essential details.

The question of supplying an absolute standard has not yet been solved. This requires the issuance of an absolutely pure epinephrin, or of samples of known, absolute strength. Until arrangements for this can be made, the results will not be absolute; but the unification of methods is desirable even for comparative experiments.

It is recommended, therefore, that the method about to be described be employed in investigations by the Council, and that it be published for the convenience of other investigators and for the information of the manufacturers; it was further recommended that its use by the latter be left optional at least for the present.

BIO-ASSAY OF EPINEPHRIN PREPARATIONS

The strength of epinephrin preparations is to be stated in terms of pure epinephrin, and must not differ by more than 15 per cent. from the strength as determined by the quantity required to produce the same rise of blood-pressure as is produced by a known quantity of pure epinephrin, when both are injected, in approximately the same dilution, and at the same rate, into an homologous vein of the same mammal.

1. *Preparation of Experiment:*—A medium-sized dog (or less conveniently, a cat or rabbit), weighed and thoroughly anesthetized, is used. The carotid artery is connected with a mercurial manometer, the excursions of which are partly damped by a screw clamp on the connecting tube. It should be made to write on a drum which should revolve slowly—about 1 to 4 inches per minute.

A short cannula of small bore is tied into each saphenous vein close to its junction with the femoral vein and the veins clamped off with small artery clamps. One of these is for the standard solution, the other for the solution to be standardized. These cannulæ are provided with rubber connections so that the dead space between the opening into the vein and that of the standardized 1 c.c. all-glass syringe does not exceed 0.5 c.c. Two all-glass syringes may be used for making the injections, one marked *A* for the standard solution, and the other marked *B* for the solution to be standardized (or graduated burettes may be used). Both vagi are divided and artificial respiration is performed. Care should be used to maintain a uniform anesthesia, complete enough to avoid muscle-movements, throughout the experiment.

2. *Preparation of Solutions:*—The standard solution is prepared by dissolving 1 part of pure epinephrin hydrochlorid in 100,000 parts of 0.9 per cent. sodium chlorid (NaCl) solution.[1]

1. The Hygienic Laboratory, the U. S. P. Revision Committee, or the Council on Pharmacy and Chemistry should issue a standard trituration of ephinephrin hydrochlorid with NaCl 1:900; the standard solution may be prepared by dissolving 0.9 gm. of this in a sufficient quantity of distilled water to make 100 c.c.

The preparation to be standardized is diluted with normal saline solution to approximately the same strength, as nearly as can be estimated, of that of the standard used.

3. *Determination of Standard Dose:*—One of the syringes (*A*) and its cannular connection are filled with the standard 1:100,000 solution. The blood-pressure tracing is started on a slowly revolving drum, and the standard solution is injected in the dose of 0.1 c.c. per kilo of body weight at such a rate that 1 c.c. passes into the vein in five seconds. Soon after the blood-pressure begins to return to normal the drum may be stopped.

The rise of the blood-pressure should be about 25 to 45 mm. of mercury (equivalent to 12.5 to 22.5 mm. rise of the writing point of a U-shaped manometer), and it should be submaximal. To determine the latter, a second injection of 0.15 c.c. per kilo should be made, with tracing, which should show a higher rise.

If the dose of 0.1 c.c. per kilo does not give a submaximal rise of at least 25 mm.; or if it gives a maximal rise, the dose should be increased or reduced respectively, until the standard effect is obtained, and this dose should be considered the "standard dose" for this animal. The injections should be made at the same rate (1 c.c. in five seconds), and an interval of at least three minutes should elapse after the blood-pressure has returned to the normal, before another injection is made.

4. *Adjustment of Dosage of the "Unknown" Solutions:*—The solution of the "unknown" sample is diluted as directed under No. 2. The unused cannula in the saphenous vein and syringe *B* are filled with the solution to be tested. A "standard dose" (see last paragraph of No. 3) is injected at the rate of 1 c.c. in five seconds, and at intervals of from three to five minutes, while a tracing is being taken. The rise of pressure is compared with that produced by the standard dose of the standard solution. According to the result so obtained, the unknown solution is diluted or strengthened, and the results controlled by injections (occasionally making an injection of the standard solution to insure constancy in the reaction of the animal). Final equality is tested by injecting alternately the same dose of the standard and unknown solutions until the average rise from three successive injections is equal within 15 per cent.

5. *Use of Several Animals:*—If an animal reacts abnormally to the standard epinephrin solution, the results from that animal shall be rejected. If the reaction changes during the course of the experiment, or if the blood-pressure falls permanently below 80 mm. of mercury, then the results after this change or fall should be rejected, or at least not compared with those obtained before the changes occurred.

The relation of the unknown solution to the standard solution should be determined on several animals, until the results on three (3) animals agree within 15 per cent., and the average of the three (3) animals shall be accepted as the final result.

Diarrhea in Infants.—The treatment advised by R. Rorke (*Western Canada Medical Journal*) for this condition is exceedingly simple. The bowels are evacuated thoroughly by castor oil if there is serious vomiting, or by lavage of the stomach and calomel in small and repeated doses if there is vomiting of a persistent character. The colon is cleared out by irrigation with normal saline solution introduced high up in the bowel. All food is withdrawn for at least twenty-four hours, giving only sterile water, which may be flavored with a little tea. If the digestive tract continues unsettled, albumin water and strained soups or broths may be given. These latter may also be used as a means of getting back to the breast again, when an abrupt return might bring about a relapse. On doing this a portion of these forms of nourishment or some sterile water should precede the nursing from the breast so as to restrict the amount of milk taken at each feeding. In most of these cases all medicinal treatment is usually unnecessary. However, if the motions become quite watery, fairly large doses of bismuth subnitrate may be prescribed with advantage.

Association News

APPOINTMENTS ON COMMITTEES

Dr. John B. Murphy, president of the American Medical Association, has made the following appointments on committees for 1911-12:

COMMITTEE ON TRANSPORTATION AND PLACE OF SESSION

(To complete the Committee, in addition to J. Rawson Pennington, Chairman, elected by the House of Delegates.)

Thomas J. Murray.....Butte, Mont.
William L. Brown.....El Paso, Tex.
James P. Hutchinson.....Philadelphia
William E. Anderson.....Farmville, Va.

COMMITTEE ON NOMENCLATURE AND CLASSIFICATION OF DISEASES

Alembert W. Brayton.....Indianapolis
(Vice Victor C. Vaughan, resigned.)

COMMITTEE ON ANESTHESIA

George Emerson Brewer, Chairman, New York City
Thomas W. Huntington.....San Francisco
Yandell Henderson.....New Haven, Conn.
Fred T. Murphy.....St. Louis
E. Denegre Martin.....New Orleans

COMMITTEE ON ESTABLISHMENT OF PHYSICIANS' SANITARIUM

Edward Jackson, Chairman.....Denver
Alexander C. Magruder.....Colorado Springs, Colo.
Joseph Yates Porter.....Jacksonville, Fla.
Algernon T. Bristow.....Brooklyn
Fitch C. E. Mattison.....Pasadena, Cal.

COMMITTEE TO FORMULATE AMENDMENTS TO THE CONSTITUTION AND BY-LAWS TO EXTEND MEMBERSHIP

D. S. Fairchild, Chairman.....Clinton, Ia.
John W. Young.....Grenada, Miss.
Charles S. Sheldon.....Madison, Wis.
Horace D. Arnold.....Boston
Jere L. Crook.....Jackson, Tenn.

COMMITTEE TO ARRANGE FOR CLINIC DAYS

Charles L. Mix, Chairman.....Chicago
Edward Martin.....Philadelphia
Philip Marvel.....Atlantic City, N. J.
Alexander Lambert.....New York
John M. T. Finney.....Baltimore

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COMMITTEE TO CONSERVATION CONGRESS

The President has created and appointed the following Committee to Represent the American Medical Association at the Third National Conservation Congress:

William A. Evans, Chairman.....Chicago
Abraham Jacobi.....New York
Hubert Work.....Pueblo, Colo.
Norman Bridge.....Los Angeles, Cal.
Oscar Dowling.....Shreveport, La.
The Very Rev. Andrew Morrissey...South Bend, Ind

Correspondence

Fatal Poisoning from Strychnin in the Nose

To the Editor:—September 6, about 11:00 a. m., a man in the habit of snuffing cocain went to a drug store and called for a bottle of that drug. By mistake he was given a bottle of strychnin sulphate, of which, he said, he used about the amount of a pea before he left the drug store. At noon the same day, I was called to see him and he told me that he had just taken a dose of cocain which was about to kill him; it had never had such effect before. While I was preparing a hypodermic injection, I received a message explaining that the substitution of strychnin for cocain had just been discovered in the drug store. When I returned to the patient, he was having convulsions and continued to have them off and on until he died at 1:30 p. m., about two and a half hours after having used the poison. I do not remember having seen a report of any case of poisoning from strychnin sulphate in this manner, and I would like to have an opinion on it.

J. A. BURNETT, Marble City, Okla.

COMMENT.—Naturally the placing of a soluble salt of strychnin, like the sulphate, in the nasal cavity affords an opportunity for absorption as great as, or greater than, when swallowed. The dose given can be known only approximately, but must have been several times as large as doses which are known to have proved fatal. The fatal period was about the average. The unfortunate character of the accident needs no comment. In the reported human strychnin-poisonings, the poison has been administered by the mouth or hypodermically so far as our observation goes except in two instances: In one case after the application of powdered strychnin to the eye, tetanus followed in three or four minutes (Schuler: *Gaz. méd. de Paris*, 1861, Series 3, xvi, 98). In another instance, the inhalation of steam from a hot mixture containing strychnin caused mild poisoning (Newbecker: THE JOURNAL A. M. A., Jan. 30, 1904, p. 310).

"There's a Reason"

To the Editor:—On my return from an extended trip in the East I was much surprised to learn that THE JOURNAL of the American Medical Association, in its issue of August 19, had taken occasion to attack the *American Journal of Clinical Medicine* editorially.

In this editorial the reader is insidiously led to the conclusion that there was a carefully prepared plan on our part, in cooperation with Mr. Post, to collect testimonials for Grape-Nuts and Postum Cereal. That this inference is unjustified could easily have been learned by THE JOURNAL, if it had taken the trouble to communicate with me. However, I am glad to give the profession all the facts in the case, and these are as follows:

Some months ago I had the pleasure of a personal interview with Mr. Post. At that time I was impressed by his candor and evident essential honesty, and convinced that he had not for some time been receiving fair treatment at the hands of some of his critics. While I believed, and still believe, that he has made a serious mistake in the character of some of his advertising (and this I took occasion to tell him personally—and he admitted it) I was also convinced that he was being made the victim of unnecessarily bitter attacks. While I would not defend him for advertising his foods as "cures" for disease, I did believe and still believe that the foods themselves are good, and that in advocating simplicity in diet and showing the harmfulness of the caffein-bearing beverages, he was rendering a real service to the people.

It was this feeling, with the desire to learn exactly how the readers of our journal felt toward Mr. Post and his products, that led me to send letters (we were quoted in THE JOURNAL correctly) to quite a number of our subscribers, their names being taken at random. I had decided that whether we should continue carrying the advertisement of the Post products or not was to depend on the character of the replies which we received from this straw vote. As a result of this vote it may interest you to know that we have received and have on file, subject to inspection, about 700 letters in praise of these products, about 500 which are noncommittal or indifferent, and about fifty which are condemnatory—but with no essential reasons given. We still carry their copy.

Your inference that the purpose of this campaign was to collect testimonials for Mr. Post was an unfortunate mistake. I am frank to say that a few (a mere bagatelle, proportionately) of these letters received were sent to Mr. Post for his inspection (but in every case with the writer's permission); and so far as we know, not one of these has been published.

I sent out these letters to our subscribers in the very kindliest spirit, primarily with the purpose of securing the information asked for our own guidance, and with no thought of deceiving or misleading anyone. So far as I can perceive, no man has been injured, but rather the cause of fair dealing between man and man, and the advertisers and the public, has been enhanced thereby. The one mistake I may have made was in failing to make the language of my letters sufficiently "judicial"—or indifferent—in tone.

Your suggestion that we "wish some excuse for participating in the benefits of his (Post) million-dollar advertising campaign" needs no comment. We have carried their business for years and see no reason why we should not continue to do so. Under the circumstances, it hardly seems necessary to state that the question of profit to us was not a factor in this straw vote—not in any sense of the word.

W. C. ABBOTT, Chicago.

COMMENT.—We publish the above "explanation" for what it is worth. The point of our criticism—dismissed by Dr. Abbott in three lines—was that a medical journal, in seeking to learn the attitude of its readers toward certain advertised products, should submit to its subscribers a series of leading questions so worded as, practically, to preclude any but favorable replies. It is not surprising that the answers to these letters sent out by the *American Journal of Clinical Medicine* were favorable to the products; the surprising thing is that there were any letters that were otherwise! The fact that there were nearly as many indifferent and condemnatory replies as there were replies praising the product, would, in view of the wording of the letter, have given pause to anyone who had not prejudged the question. The wish was evidently father to the thought. The letter said, in effect:

> We have been advertising Post's products for over ten years.
> We have always believed they were pure; we have used them and recommended them extensively.
> Will you cooperate by giving us your opinion?

Is it any wonder that the majority of the replies were favorable? Would there have been any "cooperation" in an unfavorable reply? Can anyone believe that evidence collected by such means has the slightest value? Of course, as testimonials, these answers doubtless have a distinct commercial value and there is little question that Mr. Post will find a use for those physicians' letters that have been so generously collected and forwarded him. In the famous suit in which Post was condemned to pay *Collier's* $50,000 for libel, Post was able to produce one favorable opinion of his products from a medical man—just one. Now he will have an abundance. As *Collier's* said, commenting on this, "It seems to us that, on every principle of give and take, the advertising of Postum and Grape Nuts ought to continue to appear in the *American Journal of Clinical Medicine* for the next thousand years."

Treatment of Rhus Poisoning

To the Editor:—For many years I have known of a certain cure for poisoning from ivy and various species of rhus. This cure could be described briefly as the last thing that was put on. It was very much like the cures for vomiting of pregnancy. The last thing employed in any given case was a specific.

For something over forty years I have suffered from ivy poisoning, on an average, more than once a year. As a fisherman, hunter and horticulturist, no degree of caution sufficed to allow of my escape from ivy poisoning for an entire season when in America.

Not long ago I read of the discovery by Dr. Berryhill, of the United States Navy, that ivy poisoning was caused by an irritating oil produced in various parts of the plants of poisonous species of rhus, and that proper treatment consisted in scrubbing affected parts vigorously with hot soapsuds, followed by alcohol. A few days later while at a farm house I was poisoned on the hands and arms. Alcohol was applied freely, but the scrubbing brush and hot soapsuds were not available. It is often the case that one finds only the necessities like alcohol at a farm house, without any luxuries in the way of scrubbing brushes. The treatment with alcohol alone was not very effective, and my confidence went back to palliatives like hyposulphite of soda and acetate of lead. A week ago, I was again poisoned severely on the hands and arms. This time a good scrubbing was given with hot soapsuds and a brush, followed by scrubbing with ether on a rag. In five minutes it was evident that a cure had been effected. There was no discomfort at any subsequent moment. The red elevation at the sites of vesication lessened day by day, and without any irritation in evidence. Dr. Berryhill said nothing about the employment of ether, and it is probable that alcohol, as he suggested, would be better as a rule.

The gratification of finding this almost instantaneous cure for ivy poisoning is such that I publish the note as personal experience promptly.

ROBERT T. MORRIS, New York.

To the Editor:—There was what might be called an epidemic of skin diseases due to poison ivy at Woods Hole, Mass., this summer. Many of the students, investigators and employees at the U. S. Bureau of Fisheries laboratory suffered from it as did also many visitors. At the seashore an insect bite is usually the portal of entry of the rhus toxin. Not only mosquitoes but the so-called sand fleas are dangerous insects, if their bites precede or follow the poison ivy eruption. The manner of acquiring the eruption cannot always be explained. I know of one man who acquired it from his long-haired St. Bernard dog, who, after rolling in these plants on the way to the beach, would brush past his master's legs and thus infect him. Ladies often get it in drawing off their skirts and shoes that have come in contact with the plant.

There was no end of methods of treatment and as a rule when there are many kinds of treatments for one abnormality not one of them is effective. Therefore it is with much hesitancy that I add another method to this already swollen polypharmacy. But here the other methods had been tried and failed and my new plan was so universally beneficial that I cannot resist publishing it. There are two etiologic ideas that guided me. In the first place it was known that the active poison was an essential oil and therefore only solvents for oils which had a greater affinity for it than the cutaneous cells could remove it. In the second place it soon became evident to me from repeated microscopic examinations of the discharge that all severe cases, at least, are mixed skin infections, due to an invasion of bacteria—even pyogenic cocci—after the rhus had entered.

The first indication was met by an alkaline hot bath (ammonia or bicarbonate of sodium) added to a hot bath and liberal rubbing with ethereal antiseptic soap. Thereafter the parts are bathed in 85 per cent. alcohol and dried.

The second cause is met by the yellow oxid of mercury ointment most effectively.

℞

Unguenti hydrargyri oxidi flavi.....	℥ss
Morphini	gr. ij

M. Ointment.

There is however a third factor, the distress of the itching and the discharge. For this, after going through the above treatment in the morning, the following ointment should be applied at night.

℞

Bismuth subgallate	100 m
Solution epinephrin (adrenalin chlorid)—1:1000—	℥v
Lanolin	℥i
White petrolatum q. s.....ad.	℥i

M. Sig: Ointment. Rub in liberally, then dust with an antiseptic powder.

But the yellow oxid of mercury ointment must precede this and the patient must avoid the locality where the rhus grows. The ethereal soap cannot be used around the eyes. Out of fourteen patients, ten were cured in eight days and the method soon acquired the reputation of a specific. Seven cases were so severe that the sufferers were confined to bed from four to eight days. The alkaline bath should be taken daily.

JOHN C. HEMMETER, M.D., PH.D., Baltimore.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FISH-POISONING

To the Editor:—Please give the bacteriology, pathology, diagnosis and treatment of so-called fish-poisoning or salmon-poisoning occurring among handlers of fish on the Pacific Coast.

L. B. SIMS, M.D., Blaine, Wash.

ANSWER.—We presume that our correspondent refers to an obscure disease observed in employees connected with the salmon-canning business, especially among the Chinese laborers in the Alaska canneries and on the ships bound homeward after the close of the fishing season. Deaths during the voyage and after arrival at port are common, and serious illness affects a comparatively large number each year. On one vessel three weeks en route from Alaska to San Francisco, there were five deaths during the voyage, two more deaths in quarantine and twenty other cases of serious illness in a gang of about 125 coolies. The cases present such a noteworthy similarity of symptoms as to suggest a common cause. The disease begins with general weakness which gradually increases. In a few days the feet and legs become edematous and swollen, and the standing posture is difficult or impossible. There may be precordial discomfort, but there is no pain, no tenderness of nerves or muscles, no abnormality of reflexes and no fever. Respiration is accelerated, the heart action is weak and rapid, there is a systolic murmur, and the area of precordial dulness is increased. The only significant pathologic changes found post mortem are in the heart. This organ is enlarged, flabby and fatty; the muscle is pale, soft and easily torn; and the walls are very much thinner than normal. Bacteriologic examination is without positive results.

The clinical history and the post-mortem findings point to an acute degeneration of the heart-muscle, due to malnutrition. The primary cause of the disease seems to be found in the exhausting labor, poor quality of food and unhygienic surroundings. The sanitary conditions under which these laborers live, especially on shipboard, are described as frightful, and a public health officer (Lumsden, L. L.: Public Health Reports, U. S. P. H. and M.-H. S., xv, 1900) has said that "it is a crime against humanity that these helpless, irresponsible creatures should be herded together in this way, and allowed to remain amid all this filth during a voyage of about three weeks."

VASECTOMY

To the Editor:—Please give me references to literature on vasectomy—history, methods and results. G. F.

ANSWER.—The physiologic effect of bilateral excision of a portion of the vas deferens, commonly called vasectomy, was studied on animals a century ago by Sir Astley Cooper, and has been investigated by many others since. The unanimous report is that no effect whatever can be detected, except the imprisonment of spermatozoa and consequent sterility. Both functions of the testicle—the so-called internal secretion necessary to adult masculinity, and the production of spermatozoa—continue unimpaired indefinitely. In a human subject, normal active spermatozoa were found in the testis seventeen years after the occlusion of the vas. Sexual desire and power continue unaffected, as they do also after bilateral occlusion of the vasa by gonococcus epididymitis, and in cases of congenital absence of the vasa.

In the human subject, excision of the diseased vas has long been a standard measure; bilateral excision of a piece of the normal duct was introduced by Lennander, in 1894, as a substitute for castration as a means of relieving the ills consecutive to prostatic hypertrophy; and for several years thereafter it had considerable vogue. This operation is used also to pre-

vent the recurrence of epididymitis resulting from chronic infection of prostate and vesicles; and it is often added to a prostatectomy to prevent epididymitis which is apt to follow the latter operation. Its employment for the purpose of sterilizing mentally defective males, now authorized by law in at least four states in the Union (Indiana, California, Connecticut and Iowa), began in Indiana in 1897; the measure has also been under consideration in a number of other states.

The operation is surgically and physiologically harmless; with local anesthesia a half-inch cut is made to the vas, the latter pulled up above the skin, about an inch of the duct excised, the cut ends ligated and dropped into the wound. Surgical cleanliness is requisite.

The following articles may be referred to:

Belfield, W. T.: Sterilization of Criminals and Other Defectives by Vasectomy, *Jour. New Mexico Med. Soc.*, July, 1909; abstr. in THE JOURNAL, April 10, 1909, p. 1211.
Sharp, H. C.: Vasectomy as Means of Preventing Procreation in Defectives, THE JOURNAL A. M. A., Dec. 4, 1909, p. 1897.
Bloss, J. R.: Sterilization of Confirmed Criminals and Other Defectives, *West Virginia Med. Jour.*, March, 1910; abstr. in THE JOURNAL, April 16, 1910, p. 1336.
Foster, B.: Sterilization of Habitual Criminals and Degenerates, *Northwest Lancet*, Jan. 15, 1910; abstr. in THE JOURNAL, Nov. 20, 1909, p. 1847.
Rentoul, R. R.: Proposed Sterilization of Certain Degenerates, *Med. Press and Circular*, Dec. 29, 1909.
Carrington, C. V.: Sterilization of Habitual Criminals, *Virginia Med. Semi-Month.*, Dec. 24, 1909; abstr. in THE JOURNAL, Oct. 23, 1909, p. 1420, and also March 19, 1910, p. 995.
Chandler, J. W.: Sterilization of Confirmed Criminals, Idiots, Imbeciles and Other Defectives by Vasectomy, *Jour. Med. Soc. New Jersey*, December, 1909; abstr. in THE JOURNAL, Aug. 28, 1909, p. 736.
Barrow, B.: Vasectomy for the Defective Negro with His Consent, *Virginia Med. Semi-Month.*, Aug. 26, 1910.
Preston, C. H.: Vasectomy; Its Ethical and Sanitary Limitations, *West Virginia Med. Jour.*, July, 1910.
Hoag, J. C.: Relation of Vasectomy to Eugenics, *Chicago Med. Record*, January, 1911.

PHYSICIANS AND COCAIN PRESCRIBING

To the Editor:—Have I a right to use cocain in my prescription work and to give out the mixture myself in my own prescriptions? Have I also a right to prescribe or to send these cocain mixtures outside of the county or the state? Must the presence and percentage of cocain be stated? F. F. E., Illinois.

ANSWER.—The federal government in "Food Inspection Decision 57" has declared the status of packages compounded according to physicians' prescriptions and entering into interstate commerce, as follows:

"If a package compounded according to a physician's prescription be shipped, sent or transported from any state or territory or the District of Columbia to another state or territory or the District of Columbia by a compounder, druggist, physician, or their agents, by mail, express, freight, or otherwise, the label or such package is required to bear the information called for by Congress. If, however, the patient himself, or a member of his household, or the physician himself carries such package across a state line, and such package is not subject to sale, it is held that such package need not be marked so as to conform with the law, because such a transaction is not considered one of interstate commerce.

"The package may be marked so as to comply with the act by either stamp, pen and ink or typewriter, provided all such written matter is distinctly legible and on the principal label, as prescribed in Regulation 17."

The national government has no jurisdiction over packages of medicine that do not go out of the state in which they are put up. The state in which our correspondent lives (Illinois) deals with the subject of cocain prescribing through its pharmacy law. Sections 14a and 14b of this law read as follows:

"§ 14 *a*. It shall be unlawful for any druggist or other person to retail, sell or give away any cocain, alpha or beta eucain, or any salt or any compound or derivative of any of the foregoing substances, or any preparation or compound containing any of the foregoing substances or any of their salts or compounds or derivatives, except on the written prescription of a duly registered physician, which prescription shall contain the name and address of the person for whom prescribed, and the date the same shall have been filled, and shall be permanently retained on file by the person, firm or corporation where the same shall have been filled, and it shall be filled but once, and of it no copy shall be taken by any person, and the original shall at all times be open to the inspection of the prescriber, to the State Board of Pharmacy, and all officers of the law; except, however, that such cocain, alpha or beta eucain, or any salt or any compound, or any derivative of the foregoing substances, or any preparation or compound containing any of the foregoing substances or any of their salts or compounds or derivatives, may lawfully be sold at wholesale on the written order of a licensed pharmacist, or licensed druggist, duly registered practicing physician, licensed veterinarian or licensed dentist, provided that the wholesale dealer shall affix or cause to be affixed to the bottle, box, vessel or package containing the article sold, and on the outside wrapper of the package as originally put up, a label, distinctly displaying the name and quantity of cocain, alpha or beta eucain, or any salt or compound or derivative of any of the foregoing substances sold, and the word "poison," with the name and place of business of the seller, all printed in red ink; and, provided also, that the wholesale dealer shall, before delivering any of the articles, make or cause to be made, in a book kept for the purpose, an entry of the sale thereof, stating the date of sale, the quantity, name and form in which sold, the name and address of the purchaser, and the name of the person by whom the entry is made; and the said book shall always be open for inspection by the proper authorities of the law, and shall be preserved for at least five years after the date of the last entry made therein.

"§ 14 *b*. It shall be unlawful for any duly registered physician, or other person, to prescribe, sell or offer for sale, dispense or give away any cocain, alpha or beta eucain, or any salt or compound or derivative of the foregoing substances, or any of their salts or compounds or derivatives, or preparation or compound containing any of the foregoing substances, to any person addicted to the habitual use of cocain, alpha or beta eucain, or any salt or compound or derivative of the foregoing substances, in any form."

BITES OF SNAKES, SPIDERS AND OTHER NOXIOUS CREATURES

To the Editor:—Please give references on symptoms and treatment of bite by (1) rattlesnake, (2) scorpion, (3) tarantula and (4) small black spider. A. L. W.

ANSWER:—1. A full account of venomous serpents, including the rattlesnake, is found in the "Manual of Tropical Medicine," by Castellani and Chalmers (published by W. Wood & Co., 51 Fifth Avenue, New York. Ed. 1, price $6.00). The following references to the subject are found in the literature since 1905:

Rogers, L.: Snake-Bite Treated by Incision and Application of Permanganate of Potash, *Indian Med. Gaz.*, October, 1905; abstr. in THE JOURNAL, Dec. 9, 1905, p. 1830.
Ferguson, A. D.: Adrenalin Chlorid in the Treatment of Rattlesnake-Bite, *Tex. Med. News*, November, 1906.
Haw, W. H.: Two Cases of Snake-Bite with Suggestions for Treatment, *Lancet*, April 27, 1907; abstr. in THE JOURNAL, May 25, 1907, p. 1819.
Baier, F. C.: Rattlesnake-Bite, with Recovery, *Northwest. Lancet*, June 15, 1907.
Braddock, C. S.: Treatment of Snake-Bites as Seen in the Jungle, *New York Med. Jour.*, Nov. 8, 1907; abstr. in THE JOURNAL, Nov. 23, 1907, p. 1803.
Willson, P.: Snake-Poisoning in the United States, *Arch. Int. Med.*, June, 1908; discussed editorially in THE JOURNAL, July 11, 1908, p. 132.
White, C. S.: Case of Poisoning from the Bite of a Rattlesnake, THE JOURNAL, May 8, 1909, p. 1486.
Lyon, W. C.: Venomous Snakes of the United States, *Mil. Surg.*, Wash, October, 1910.

In this connection a paragraph in the Vienna Letter in this issue will be of interest.

2. An extensive and excellent article is by H. V. Jackson: Poisonous Scorpion, Including a Review of Some Recent Literature and Personal Experiences, *Interstate Med. Jour.*, July, 1910. See also an article by C. Todd: Antiserum for Scorpion Venom, *Jour. Hyg.*, April, 1909; abstr. in THE JOURNAL, July 3, 1909, p. 82.

3. We find no articles on tarantula-poisoning. The tarantula produces merely local swelling and is not dangerous.

4. We cannot say from our correspondent's description which variety of spider is referred to. Castellani and Chalmers ("Manual of Tropical Medicine") describe the symptoms produced by the bite of several spiders, including *Lactrodectus mactans*, which is black with red spots. A case of a bite by this spider is reported, together with editorial comment on the spiders in general: Hodgdon, A. L.: Bite of a Poisonous Spider, *Lactrodectus mactans*, THE JOURNAL, May 4, 1907, p. 1507.

CASE FOR DIAGNOSIS

To the Editor:—I have a patient who began to suffer ten months ago with tingling in the ends of fingers and toes, which gradually traveled toward the trunk. Hypersensitiveness followed tenderness on pressure over the trunks of nerves. It has now reached the trunk, and, in fact, the whole extent of the peripheral nerves. The extra sensitiveness changes from one part of the body to the other with powerful pain in the cardiac regions, and the patient almost dies from pain in the heart, owing to contractions of muscles. In the precordial region there is a separation of costal cartilage from the ribs on the left side. Patient's appetite is now very good, bowels a little constipated, urine normal in quantity and quality, habits good. He has been in bed now about six months. Please give diagnosis and treatment. I call it "multiple peripheral neuritis." DR. S. M. HENRY, Groom, Texas.

ANSWER.—The case as described is not like multiple peripheral neuritis, but suggests the onset of locomotor ataxia with severe girdle-pains or crises. Neuritis produces paralysis and anesthetic zones which are not described. It is desirable to know the condition of the patient's reflexes, whether there are anesthetic zones, whether there is any paralysis or ataxia or muscular atrophy and also his history as to exposure to alcoholic, lead or other poisoning or any of the infections which produce neuritis or locomotor ataxia and allied diseases. Is there disease of the costal cartilage or rib which are said to be separated: i. e., evidence of inflammation or trophic disease? The case is one for careful scientific investigation, as otherwise a correct diagnosis would be only possible by a fortunate guess. The diagnosis being made, the method of treatment will become clearer.

The Public Service

Medical Department, U. S. Army

Changes during the week ended Sept. 16, 1911.

Stone, Frank P., dental surgeon, reported for duty at Fort Barrancas, Fla.

Wing, Franklin F., dental surgeon, returned to Fort D. A. Russell, Wyo., from temporary duty at Fort Logan, Colo.

Boak, S. D., dental surgeon, left West Point, N. Y., on thirty days' leave of absence.

Thomason, Henry D., captain, ordered to Milwaukee, Wis., for the purpose of reading a paper before the Association of Military Surgeons of the United States, Sept. 26 to 29, 1911.

Richard, Charles, colonel, leave of absence extended ten days.

Ferenbaugh, Thomas L., and Gentry, Ernest R., lieuts., relieved from duty in the Department of Texas and will return to proper stations.

Bowen, Albert S., lieut., ordered to Fort Snelling, Minn., for temporary duty; granted thirty days' leave of absence.

Maus, Le Mervin, colonel, leave of absence extended ten days.

Suggs, Frank, M.R.C., granted eighteen days' leave of absence.

Whitney, Walter, M.R.C., ordered to proceed from Fort McPherson, Ga., to Fort Dale, Fla., for temporary duty at the latter post.

Eliot, Henry W., M.R.C., granted thirty days' leave of absence.

Tetrault, Charles A., M.R.C., ordered to proceed from Fort Michie, N. Y., to Fort H. G. Wright, N. Y., for temporary duty.

Changes during the week ended Sept. 23, 1911.

McAlister, John A., Jr., dental surgeon, ordered to proceed from Fort Sam Houston, Texas, to Camp Cloudroft, N. Mex., for temporary duty.

Millikin, John D., dental surgeon, arrived at San Francisco from Philippine Islands and left same date on two months' leave of absence.

Burket, John A., lieut., granted leave of absence from Oct. 3, 1911, to such date as it may be necessary for him to start for the Philippine Islands.

Norman, Seaton, M.R.C., on expiration of present leave will proceed to Fort Clark, Texas, for duty. Lieutenant Norman will stand relieved from duty at Fort Clark at such time as will enable him to comply with orders hereinafter given, and will proceed to his home and stand relieved from further active duty in the Medical Reserve Corps, March 1, 1912.

Russell, F. F., major, ordered to New York City and Boston to investigate recent bacteriological developments in connection with course of instruction at the Army Medical School in this city.

Smith, William H., lieut., granted ten days' leave of absence.

Thomason, Henry D., captain, is detailed to attend the annual meeting of the National Guard Association of the United States, Buffalo, N. Y., Oct. 9 to 11, 1911.

Winter, Francis A., major, ordered to proceed to St. Louis and Jefferson Barracks, Mo., on official business.

Marrow, Charles E., major, granted leave of absence for two months, about Sept. 10, 1911.

McAlister, John A., Jr., dental surgeon, left Fort Sam Houston, Texas, en route to Camp Cloudcroft, N. Mex., for temporary duty.

Little, William L., captain, ordered to proceed from Fort Adams, R. I., to Springfield Armory, Mass., for physical examination of officers stationed at that place, about Sept. 25, 1911.

Hughes, Leonard S., lieut., granted ten days' leave of absence about Nov. 20, 1911.

Rich, Edwin W., captain, will, in addition to his other duties, assume charge of the medical supply depot, San Francisco, during the absence of Colonel William W. Gray, Medical Corps.

Hungerford, George H., M.R.C., resignation accepted.

Buchsbaum, Maurice, M.R.C., ordered to Army General Hospital, San Francisco, for observation and treatment.

McIntyre, captain, granted leave of absence for three months when his services can be spared, with permission to go beyond sea.

Fletcher, John P., lieut., granted leave of absence for one month.

Tetrault, Charles A., M.R.C., assigned to permanent station at Fort H. G. Wright, N. Y.

Craig, Charles F., capt., is detailed to attend the meeting of the Southern Medical Association, at Hattiesburg, Miss., Nov. 14 to 16, 1911.

Robbins, Chandler P., major, granted fourteen days' leave.

Voorhies, Hugh G., dental surgeon, granted twenty days' leave.

Kirkpatrick, Thomas J., major, granted ten days' leave.

Bushnell, George E., colonel, granted thirty days' leave.

Davis, William T., captain, granted ten days' leave of absence.

U. S. Public Health and Marine-Hospital Service

Changes for the seven days ended Sept. 20, 1911.

Guiteras, G. M., surgeon, detailed to represent the service at the fifth international sanitary conference of American republics, to be held at Santiago, Chile, Nov. 5-12, 1911.

Ramus, Carl, P. A. surgeon, granted seven days' leave of absence from Aug. 24, 1911, under paragraph 189, Service Regulations.

Warren, B. S., P. A. surgeon, granted ten days' leave of absence from Sept. 20, 1911.

Stimson, A. M., P. A. surgeon, directed to proceed to Detroit, Chicago and Milwaukee on special temporary duty. Detailed to attend the meeting of the Michigan State Medical Society, in Detroit, Sept. 27 and 28, 1911, and the meeting of the Chicago Medical Society, Oct. 4, 1911.

Krulish, E., asst.-surg., granted one month's leave of absence from Sept. 12, 1911.

Bond, B. D., A. A. surgeon, granted leave of absence, without pay, for the period Aug. 25, 1911, to Jan. 1, 1912.

Crepin, H. E., A. A. surgeon, granted twenty-one days' leave of absence from Sept. 1, 1911.

Fairbanks, George D., A. A. surgeon, granted thirty days' leave of absence from Sept. 11, 1911.

Markoe, W. W., A. A. surgeon, granted thirty days' leave of absence from Sept. 19, 1911.

Marsh, W. H., A. A. surgeon, granted eleven days' leave of absence from Sept. 23, 1911.

Medical Economics

THE NATIONAL GRANGE AND A DEPARTMENT OF HEALTH

In his remarkable speech before the United States Senate, in July, Senator Works of California said that the National Grange had withdrawn its endorsement of a national department of health. In an open letter addressed to Senator Works, the secretary of the Conference of Progressive State Granges cites the official proceeding of the National Grange to show that, instead of repudiating its endorsement of a department of health, the National Grange reaffirmed its approval of the establishment of such a department. Mr. Hampton's letter is worthy of careful reading.[1]

"*Hon. John D. Works, United States Senate, Washington, D. C.*

"DEAR SIR.—I have read with great care your speech opposing Senator Owen's bill to establish a department of health, as published in the *Christian Science Monitor* of July 11.

"You support your argument with quotations from various authorities, among them resolutions purporting to have been forwarded by C. M. Freeman, secretary of the National Grange, showing that the National Grange had completely reversed its position. If Mr. Freeman forwarded such resolutions in the form in which you have published them, he knowingly misrepresented the action of the National Grange, and his action will undoubtedly be investigated by that body at its next annual meeting.

"To prove to you that the Grange position endorsing the establishment of a federal bureau of public health was not reversed by the National Grange at Atlantic City, or by any state granges of large membership at their state meetings of later date, I submit:

"(*a*) Page 167 of the official proceedings of the Atlantic City session, containing the introduction of the general report of the Committee on Resolutions, the opening part of which reads as follows: 'We reaffirm the resolutions and declarations of the general report of the Committee on Resolutions, made and unanimously adopted at the forty-third annual session, held one year ago at Des Moines, Iowa, on public health bureau, on home economics, on tariff revision,' etc.

"(*b*) The April, 1911, issue of the *Michigan Patron* (the official organ of a number of state granges, aggregating a large percentage of the total grange membership) contains an editorial, 'The Grange Position on Public Health,' in which a statement made in a circular letter by the League for Medical Freedom, that the Grange had reversed its position on public health, is reviewed at length and proved not true. This proof, you will note, includes resolutions by the National Grange and editorials by the national master.

"(*c*) A copy of the health resolutions adopted by the Maine State Grange at its annual meeting in Augusta, Dec. 20-22, 1910. The points in these resolutions to which I especially desire to call your attention are: 'That we reindorse the establishment of a federal bureau of public health, as set forth in the resolutions adopted by the National Grange at the forty-third annual session at Des Moines, Iowa, Nov. 10-20, 1909, provided that such legislation properly safeguards the rights of all schools of medical practice,' and 'That the Conference of State Granges is urged to take such action as may be expedient to unite all farmers in supporting a public health policy in the interests of all the people, and that the conference appeals to all public-spirited citizens to unite with the farmers in this important work.'

"You will notice from the above (*a*) that the *first* of the public measures *re*-indorsed by the National Grange at Atlantic City was the action of the Des Moines meeting in 1909, on public health. I submit the resolution thus emphatically *re*-indorsed:

"'*Resolved*, That the National Grange favors the establishment of a national health bureau or commission, and urges on Congress the necessity for the immediate enactment of legislation for this purpose.'

"I sincerely believe you would not willingly help to place the Grange in a false light before the country, but I feel you have been misled, and have unwittingly been made the means by which this has been done. And as your speech has been given wide publicity in the *Congressional Record* and in the public press, I address this open letter to you in order that the true position of the Grange may be placed before Congress and the people.

1. See also Current Comment, page 1140.

"For the honest opposition of yourself and the Christian Scientists in general, I have the most sincere respect; but it is the opposition which seeks to gain its object by tricks and misrepresentations, and by exciting the fears and prejudices of the people, which convinces us that back of all the honest opposition—and no doubt unknown to it—are the same interests that are fighting the pure food laws, and which, even at this writing, hope to succeed in forcing Dr. Wiley out of office.

"It is this opposition which we feel should be forced out into the open, where its nature can be fully understood. If this is done, it will at once remove much of the present misunderstanding, and Christian Scientists and all who sincerely desire honest medical freedom should assist in accomplishing this.

"Christian Scientists fear the consequences that would follow the enactment of such legislation as the Owen bill proposes. If that fear is well founded, and your belief that the American Medical Association is a medical trust is well founded, is it not time that the country knew these and all the facts relating to this burning question? What possible better means have we than a rigid Congressional investigation by a committee specially organized for that purpose?

"The House of Representatives, as at present constituted, is believed to be honestly desirous of serving the people. It is investigating the trusts, probing into the expenditures of the various departments of the government, and why should it not have a committee on health and thoroughly investigate this matter of such vital importance to all the people. Surely the Christian Scientists are not opposed to honest investigation by a committee having power to probe every charge and countercharge to the bottom.

"The farmers want the facts and a square deal for all the people—Christian Scientists and all schools of medicine included—and Christian Scientists should join with them in their present efforts to get Congress to appoint a committee on public health and promptly institute a thorough investigation. Farmers and Christian Scientists should not work at cross-purposes on so important a matter. Honest investigation by Congress is the way to bring them together, and I appeal to you to use all your influence to bring this about.

"GEORGE P. HAMPTON.

"Secretary, Conference Progressive State Granges."

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

[NOTE.—The pamphlets containing the outline of the postgraduate study course for county societies for the coming year are ready for distribution. Secretaries of county societies can secure supplies by writing to the Secretary, Council on Health and Public Instruction, American Medical Association, 535 Dearborn Ave., Chicago.]

First Month—Fourth Weekly Meeting

PAPILLOMA: ORIGIN, STRUCTURE, VARIETIES

WARTS: Microscopic section, distribution, number, pigment, secondary changes.

VILLOUS PAPILLOMA: Structure, gross and microscopic, prognosis.

INTRACYSTIC PAPILLOMA: Structure, gross and microscopic, distribution.

PSAMMOMA: Structure, chemistry, location, prognosis.

ADENOMA

Structure, varieties, capsule, fluid, recurrence, infiltration, secondary changes.

DERMOIDS: STRUCTURE, DISTRIBUTION

SEQUESTRATION DERMOIDS: Location, mode of origin, contents, prognosis.

TUBULO-DERMOIDS: Distribution, contents, size.

LINGUAL, BRANCHIAL AND RECTAL: Location of each.

OVARIAN DERMOIDS: Origin, structure, contents, size, age.

MOLES: Distribution, structure, secondary changes.

TERATOMA

Differentiate from dermoids.

CYSTS: MODE OF ORIGIN, STRUCTURE, CONTENTS

Retention cysts, tubulo-cysts, hydroceles and gland cysts.

Monthly Meeting

The Differential Diagnosis of Benign and Malignant Tumors.

The Problem of Metastasis in the Treatment of Malignant Tumors.

The Diagnosis and Treatment of Tumors of Long Bones.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, October 2-3. Sec., Dr. Ancil Martin.

COLORADO: The State Capitol, Denver, October 3. Sec., Dr. David A. Strickler, 612 Empire Building.

GEORGIA: Regular, Atlanta, October 10. Sec., Dr. C. T. Nolan, Marietta. Homeopathic, Atlanta, October 10. Sec., Dr. R. E. Hinman, 106½ Whitehall Street.

IDAHO: Wallace, October 3-4. Sec., Dr. O. J. Allen, Bellevue.

ILLINOIS: Coliseum Annex, Chicago, October 26-28. Sec., Dr. J. A. Egan, Springfield.

KANSAS: National Hotel, Topeka, October 10-12. Sec., Dr. H. A. Dykes, Lebanon.

LOUISIANA: New Orleans, October 19-21. Sec., Dr. A. B. Brown, 108 Baronne Street.

MICHIGAN: Legislative Bldg., Lansing, October 10-12. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: State University Minneapolis, October 3. Sec., Dr. W. S. Fullerton, St. Paul.

MISSISSIPPI: State Capitol, Jackson, October 10-11. Sec., Dr. S. H. McLean.

MONTANA: The Capitol, Helena, October 3. Sec., Dr. W. C. Riddell.

NEW JERSEY: The State Capitol, Trenton, October 17-18. Sec., Dr. H. G. Norton, 429 E. State Street.

NEW MEXICO: The Capitol, Santa Fe, October 9-10. Sec., Dr. J. A. Massie.

OKLAHOMA: Muskogee, October 10. Sec., Dr John W. Duke, Guthrie.

RHODE ISLAND: Room 315 State House, Providence, October 5-6 Sec., Dr. Gardner T. Swarts.

UTAH: Salt Lake City, October 2-3. Sec., Dr. G. F. Harding, 310 Templeton Building.

WYOMING: Riverton, October 9-11. Sec., Dr. A. B. Tonkin.

Illinois January Report

Dr. James A. Egan, secretary of the Illinois State Board of Health, reports the written examination held at Chicago, January 11-13, 1911. The number of subjects examined in was 16, total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 53, of whom 17 passed and 32 failed. Three candidates did not complete the examination and one withdrew. The following colleges were represented:

PASSED College	Year Grad.	Total No. Examined
University of Arkansas	(1909)	1
American Medical Missionary College	(1903)	1
Chicago College of Medicine and Surgery	(1910)	1
Northwestern University Medical School	(1889) (1910)	2
National Medical University	(1909)	1
College of Physicians and Surgs., Chicago.	(1904) (1910)	2
Reliance Medical College	(1910)	1
Rush Medical College	(3, 1910) (1911)	4
St. Louis College of Physicians and Surgeons	(1910)	1
Jefferson Medical College	(1908)	1
University of Pennsylvania	(1886) (1908)	2

FAILED		
Bennett Medical College	(1909) (5, 1910) (1911)	7
Hahnemann Medical College and Hospital, Chicago.	(1909)	1
Hering Medical College	(1910)	2
Jenner Medical College	(1910)	2
College of Medicine and Surgery, Physio-Medical	(1910)	3
National Medical University	(1909)	1
College of Phys. and Surgs., (1907) (1908) (2, 1910)		4
Keokuk Medical College, Coll. of Phys. and Surgs.	(1908)	1
Hospital Medical College, Louisville	(1904)	1
Louisville and Hospital Medical College	(1908)	1
Barnes Medical College	(1907) (2, 1910)	3
St. Louis University	(1907)	1
Miami Medical College	(1909)	1
Meharry Medical College	(1902) (1909) (1910)	3
Western University, London, Ontario	(1892)	1

Tennessee May Report

Dr. C. A. Abernathy, secretary of the Tennessee State Board of Medical Examiners, reports the written and oral examinations held at Nashville, Knoxville and Memphis, May 2-3, 1911. The total number of subjects examined in was 8; total number of questions asked, 64; percentage required to pass, 75. The total number of candidates examined was 276, of whom 213 passed, including 110 non-graduates, and 42 failed, including 30 non-graduates. Twenty-one candidates received temporary licenses, including 9 non-graduates. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Birmingham Medical College	(1910)	82
Howard University, Washington, D. C.	(1910)	75, 76
George Washington University	(1907)	90
College of Physicians and Surgeons, Chicago	(1907)	88
Northwestern Univ. Med. School	(1907) 80, 88; (1910)	84
Louisville National Medical College	(1911)	78

University of Louisville (1910) 80, 81, 86; (1911) 77, 78, 79, 79, 81, 81, 82, 83, 83, 83, 84, 84, 84, 85, 85, 86, 89, 89, 89, 90, 94.
Tulane University of Louisiana.....(1907) 87 87
Johns Hopkins University.....(1910) 88
Detroit College of Medicine.....(1908) 85
Washington Univ. School of Med., Baltimore.....(1868) 86
Barnes Medical College.....(1911) 84, 87
Washington University, St. Louis..(1909) 82, 89; (1911) 78
Mississippi Medical College.....(1909) 79; (1911) 85
Memphis Hospital Medical College (1906) 83, 94; (1908) 80, 83, 87; (1911) 75, 75, 75, 76, 77, 78, 80, 80, 81.
Chattanooga Medical College.....(1908) 75
Lincoln Memorial University (1911) 76, 76, 79, 79, 81, 81, 81, 82, 83, 84, 88.
Meharry Medical College (1904) 76; (1908) 75; (1909) 76; (1910) 75, 76, 79, 81; (1911) 75, 79, 84, 85, 86, 87, 88, 90, 90.
University of Tennessee.....(1900) 78; (1911) 83, 83, 88, 90
Vanderbilt University.....(1911) 78, 89, 89
University of Nashville.....(1911) 80, 92
University of the South.....(1909) 78
College of Physicians and Surgs., Memphis..(1911) 81, 89, 89, 90
University of Virginia.....(1905) 87
Non-graduates: The grade of 75 was reached by eight; 76 by one; 77 by five; 78 by two; 79 by eight; 80 by seven; 81 by nine; 82 by five; 83 by three; 84 by six; 85 by ten; 86 by four; 87 by six; 88 by seven; 89 by ten; 90 by five; 91 by five; 92 by four; 93 by one and 94 by two. The grade for one non-graduate was not obtained.

GRANTED TEMPORARY LICENSES

University of Louisville.....(1894) 74; (1909) 70
Lincoln Memorial University.....(1911) 70, 71
Chattanooga Medical College.....(1905) 72; (1910) 72
Meharry Medical College.....(1910) 70, 71; (1911) 71, 73
Memphis Hospital Medical College.....(1910) 70, 70
Non-graduates.....71, 72, 72, 72, 73, 73, 73, 74, 74

FAILED

Mississippi Medical College.....(1910) 69
Chattanooga Medical College.....(1903) 48; (1907) 47
Lincoln Memorial University.....(1906) 61; (1911) 51, 63
University of West Tennessee.....(1909) 60; (1910) 49
University of the South.....(1909) 52
Memphis Hospital Medical College.....(1911) 69
Meharry Medical College.....(1910) 57
Chattanooga National Medical College.....(1908) 80 *
Non-graduates 32, 33, 50, 50, 50, 52, 56, 57, 58, 60, 60, 60, 60, 60, 60, 61, 63, 63, 63, 64, 65, 65, 67, 68, 68, 68, 69, 87.*
The grade for one non-graduate was not obtained.
* These two applicants made the requisite grade to pass, but charges of fraud have been brought, and they most probably will be rejected; hence they are put in the list of those who failed.

The following questions were asked:

ANATOMY

1. Describe the portal system. Name the ductless glands. 3. What cranial nerve has the widest distribution? 4. Give the origin and insertion of the humeral biceps muscle. 5. Mention any one muscle that moves the humerus forward, backward or inward. 6. Describe Hunter's canal. (a) What passes through it? 7. Describe the periosteum. 8. What muscles for the tendo Achillis?

PHYSIOLOGY

1. Give composition and properties of chyle. 2. Give composition of the blood. 3. Describe secretion, properties and composition of gastric juice. 4. Give the physiologic anatomy of the testicles. 5. Describe the physiologic anatomy of the tongue concerned in gestation. 6. Give the physiologic anatomy of the mammary glands. 7. Describe the excretion of urine. 8. Name all the enzymes required to digest bread.

PATHOLOGY

1. What is stomatitis? Give the pathology of ulcerative stomatitis. 2. Describe any one pathologic condition caused by the excessive use of alcohol. 3. Describe the pathologic changes which take place in the lung in lobar pneumonia. 4. Give the pathology of parenchymatous goiter. 5. Describe the pathology of the inflammation of any one serous membrane. 6. Describe the pathology of chronic lead poison. 7. Describe the pathology of cerebrospinal meningitis. 8. Describe the pathologic condition caused by the bite of a mosquito.

MATERIA MEDICA

1. Write a prescription for chronic malaria and state how long the patient should take it. 2. Name two medicines which increase the flow of urine. The source and dose of each. 3. What is the source of digitalis and hyoscyamus? What preparation would you use and the dose of each? 4. What is the source of potassium iodid and what is the dose? Name three diseases for which you would give it. 5. Give the source of iodid of lime and iodid of soda and the dose of each. 6. What is sodium sulphate? 7. What is the source of tetanus antitoxin? 8. What is the source of cascara sagrada? What preparation would you use and what would be the dose?

CHEMISTRY

1. Describe Esbach's albuminometer and give a quantitative test for albumin. 2. Give a chemical test for pus in the urine; (a) for blood. 3. What is urea? (a) Its estimation? (b) Of what significance in nephritis? 4. What are alcohols and how classified? 5. Give chemical formula for iodoform. (a) How prepared. (b) Physiologic effects. 6. What is a simple ether? (a) Compound ether? (b) Formula for sulphuric ether? 7. What is benzine? (a) Chemical formula and properties? 8. What is arsenic? (a) Occurrence? (b) Preparation? (c) Properties? (d) Reinsch's test for arsenic?

OBSTETRICS

1. Describe, anatomically, the internal generative organs of the female. (a) State the function of each. 2. What are the dangers of traction on the child and on the placenta? 3. What is involution? (a) How long a time is usually required for this process? (b) What causes may operate to delay or prevent it? 4. Describe the immediate care of the new-born child when from any cause the mother cannot nurse it. (a) Give rules for artificial feeding. 5. Differentiate eutocia and dystocia. Mention important varieties of the latter and give their management. 6. In a labor otherwise normal but tedious, how soon would it be proper to interfere, and what symptoms would prompt such a course? 7. When does it become proper to perform craniotomy, and how should that operation be performed? 8. Define puerperal phlebitis and give its pathology, symptoms and treatment.

SURGERY

1. How would you diagnose a case of complete inguinal hernia from a hydrocele, and describe the radical cure for hydrocele? 2. Describe in full Bassini's method of operation for the radical cure of hernia. 3. Give the nature and treatment of Pott's fracture. 4. Where does senile gangrene most often occur, and what is the usual cause? 5. Give symptoms and treatment of cholelithiasis. 6. Define peritonitis. State three ways in which the peritoneum may be invaded by bacteria. 7. What are the causes and treatment of paraphimosis? 8. Differentiate dislocation of the head of the femur from fracture of the neck, and give main essentials of treatment of each.

PRACTICE QUESTIONS

1. Name the organic diseases of the heart. Define aortic stenosis. Give the physical signs of it. 2. Define lobar pneumonia. Give general symptoms of diagnosis. Give briefly a treatment. 3. What is the pulse? Name some of the varieties of the pulse and their significance. 4. Define acute Bright's disease. What are the most frequent etiologic factors which produce this form of kidney disease? Give a treatment. 5. Define leukocytosis. Define leukopenia. Name four diseases in which the leukocytes are increased in number. Name four diseases in which the leukocytes are normal or diminished. 6. Define diabetes mellitus. Differentiate between diabetes mellitus and diabetes insipidus. Give a diet for diabetes mellitus. 7. Define dropsy. Name four diseases which it accompanies. Given a disease producing it, how would you treat dropsy? 8. Name some of the common forms of tuberculosis. Give a modern treatment for pulmonary tuberculosis.

South Carolina June Report

Dr. A. Earle Boozer, secretary of the State Board of Medical Examiners of South Carolina, reports the written examination held at Columbia, June 13-15, 1911. The number of subjects examined in was 17; total number of questions asked, 105; percentage required to pass, 75. The total number of candidates examined was 124, of whom 97 passed, including 2 osteopaths, and 27 failed, including 1 osteopath. Six candidates were licensed through reciprocity. The following colleges were represented.

College	Year Grad.	Per Cent.
PASSED		
University of Alabama	(1907)	77.1
Birmingham Medical College	(1911)	81.6
George Washington University	(1909)	85.1
Howard University, Washington	(1910)	88
Atlanta Coll. of Physicians and Surgeons (1908) 81.6; (1910) 80.1; (1911) 80.1.		
University of Georgia (1908) 76; (1910) 75; (1911) 75, 75.7, 81.1, 84.3.		
University of Louisville..(1908) 75, 75.7;	(1909)	83.5
Tulane University of Louisiana	(1911)	84.3
Woman's Medical College of Baltimore..(1902) 88.4;	(1907)	78.1
University of Maryland (1910) 78.4; (1911) 75.9, 81.4, 83.4, 83.7, 87.9, 87.9, 88, 90.6.		
Johns Hopkins University..(1906) 87.3;	(1910)	77.5
Niagara University	(1897)	75
Columbia Univ., Coll. of P. and S.	(1911)	83.3
North Carolina Medical College..(1905) 81.1;	(1908)	76.1
Leonard Medical School..(1909) 79.7; (1911) 75,		84.7
Western Reserve University	(1909)	75
University of Pennsylvania	(1910)	81.3, 82.9
Temple University	(1910)	81.5
Medical College of the State of South Carolina (1906) 75.6; (1908) 77.1; (1909) 75, 80.9; (1910) 75.1, 79.4, 79.9, 81.5, 82.3, 82.4, 85.7; (1911) 75, 75, 75.5, 75.6, 76.3, 76.4, 76.9, 77.3, 77.6, 78.3, 78.4, 78.6, 79, 80, 80.1, 80.4, 80.6, 82, 82.4, 83.1, 83.7, 84.1, 84.1, 84.3, 84.5, 84.6, 85.3, 85.5, 85.9, 86.1, 86.5, 86.9, 87.9, 89.1, 89.7, 89.9.		
Lincoln Memorial University	(1911)	84.9
Vanderbilt University	(1910)	75.3
University of the South	(1906)	75
Memphis Hospital Medical College	(1911)	76.1
Medical College of Virginia	(1911)	82.5, 84.3
University of Virginia	(1910)	84.1
FAILED		
Atlanta School of Medicine	(1909)	71.9
University of Georgia	(1908)	70.5
Hospital Medical College, Atlanta	(1911)	52.7
Maryland Medical College	(1905)	57.3
Creighton Medical College	(1910)	73.4
Leonard Medical School..(1906) 70.3; (1910) 68; (1911) 63.5, 70, 73.6; (1911) 64.4, 66.1, 69.9, 70.3, 72.4 76.7.*		70
Medical College of South Carolina (1908) 62.6; (1909) 71; (1910)		
Meharry Medical College (1907) 60.4; (1909) 73.5;	(1911)	60.5
Memphis Hospital Medical College	(1911)	51.5, 65.4
University of Tennessee	(1905)	49.9
Gate City Medical College	(1910)	61.1

* Fell below 60 per cent. in one subject.

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
George Washington University	(1909)	W. Virginia
Baltimore Medical College...(1897) Maryland;	(1898)	Virginia
University of Maryland	(1909)	Maryland
Medical College of Virginia	(1905) (1909)	Virginia

Book Notices

A HANDBOOK OF PRACTICAL TREATMENT. By Many Writers. Edited by John H. Musser, M.D., LL.D., Professor of Clinical Medicine in the University of Pennsylvania, Philadelphia, and A. O. J. Kelly, A.M., M.D., Assistant Professor of Medicine in the University of Pennsylvania, Philadelphia. In Three Volumes. Vol. II. Cloth. Price, $6 net. Pp. 865, with 103 illustrations. Philadelphia: W. B. Saunders Co., 1911.

The second volume of this work includes a large number of articles on diseases of the circulatory system, infectious diseases, tropical diseases and animal parasites. The general excellence of the articles is conspicuous. The following are some of those requiring special notice: The principles of cardiac treatment are given by Clifford Allbutt in a short introduction of seven pages. The certainty given to some forms of drug medication is noted, and the fallacy of concluding that high blood-pressure means necessarily an increase of work for the heart, and a fall in pressure must need give the heart relief is pointed out. The danger to the heart from the slighter degrees of endocarditis is dwelt on and Allbutt advises to examine the heart of a child with even a slight cold every day. Myocarditis receives as much attention as pericarditis and endocarditis combined. Considerable space is devoted to a discussion of digitalis, squill, caffein and theobromin. The author expresses his belief that while squill is seldom necessary, this old cardiac remedy should not be allowed to fall into neglect. In some cases the prescription of 15 minims of tincture of squill may succeed when others of these capricious cardiac remedies have failed. Allbutt gives comparatively little credit to alcohol as a remedy in heart disease. In the treatment of dropsy, he finds that the exclusion of salt from the diet has not infrequently an astonishing success, but he is unable to define the conditions under which it succeeds. The hydropathic treatment and especially the Nauheim method are quite fully described. The surgery of the heart and artery is briefly discussed by C. T. Dent.

Typhoid fever is well treated by R. I. Cole. The subject of preventive inoculation is thoroughly discussed and the method advised. Considerable space is given to specific cure of the disease, as the author feels that this method may make possible the cure of all cases in the future. He takes a conservative position with reference to diet and expresses a decided preference for hydrotherapy over antipyretics. Pneumonia is discussed by H. A. Hare, who advocates the usual methods but warns against the abuse of strychnin and the employment of nitroglycerin, for the purpose of lowering arterial pressure. The treatment of exanthematous diseases is described by G. H. Weaver. He gives a full account of the theoretical and practical aspects of the antitoxin treatment. Intubation and tracheotomy are described in a well-illustrated article by J. H. Jopson. In accordance with its importance, tuberculosis occupies a considerable section of the book, something more than 100 pages. The article is by E. O. Otis. The hygienic methods and the details of open-air treatment are fully given with abundant illustrations. The same is true of the construction of sanatoriums and methods of sanatorium treatment. The author reviews the various specific and medicinal forms of treatment, but in conclusion emphasizes the immense superiority of the hygienic-dietetic measures. Syphilis is treated by J. W. White and A. C. Wood. Gonococcic infection is well treated by E. Martin. Vaccinia, variola and chicken-pox are discussed by J. F. Schamberg. Cerebrospinal fever, cholera and plague are considered by L. F. Barker. In the treatment of cerebrospinal fever the author makes several suggestions, such as the injection of normal serum suggested by Hektoen and a modification of Bier's hyperemia as worthy of trial when Flexner's serum cannot be obtained. The rest of the book is occupied with the treatment of various infectious diseases by a number of authors whose work is excellent, but which is impracticable to mention separately.

The reading of this volume strengthens the impressions given by the first that we have a satisfactory presentation of the resources of the modern physician which ought to be a valuable guide to the practitioner in his daily work.

PATHOLOGIC TECHNIC. A Practical Manual for Workers in Pathologic Histology and Bacteriology, Including Directions for the Performance of Autopsies and for Clinical Diagnosis by Laboratory Methods. By Frank Burr Mallory, A.M., M.D., Associate Professor of Pathology, Harvard University Medical School, and James Homer Wright, A.M., M.D., S.D., Director of the Pathological Laboratory of the Massachusetts General Hospital. Fifth Edition. Cloth. Price, $3. Pp. 507, with 162 illustrations. Philadelphia: W. B. Saunders Co., 1911.

The revision of this edition seems to be a thorough one, and a number of new methods of practical value have been introduced. The methods of obtaining the opsonic index, however, are not given. The Wassermann technic is described, but not a word is said about the tuberculin reaction, which one would expect would be described in a book that claims to give directions for clinical diagnosis by laboratory methods. No reference is made to blastomycosis or oidiomycosis; an illustration or two of the characteristic organisms would be helpful, and the same is true of sporotrichosis. One is also surprised that no mention is made of the appearance of pneumococcal and streptococcal colonies on blood-agar. In the next edition the references should be given according to some uniform method and standard abbreviations should be used.

THE BELLEVUE HOSPITAL NOMENCLATURE OF DISEASES AND CONDITIONS WITH RULES FOR THE RECORDING AND FILING OF HISTORIES. Compiled by the Committee on Clinical Records Composed of Drs. Robert J. Carlisle, Warren Coleman, Thomas A. Smith and Edmund L. Dow. Revised and Made to Conform to the International Classification, 1911. Morocco. Pp. 327. [General Medical Superintendent, Bellevue Hospital, First Avenue and 26th Street, New York City.]

The nomenclature of diseases compiled by the committee on clinical records of Bellevue Hospital is too well known to students of vital statistics to require any description. The present edition is conveniently and substantially prepared, being in the form of a small volume with flexible leather covers which can be carried easily in the pocket. The work was published first in 1903 and revised in 1909; the present edition has been collated with the international list of causes of death, while the orthography conforms to the Basel nomenclature endorsed by the Committee on Nomenclature of the American Medical Association. Until such time as we have a single, official and universally observed system of nomenclature, the Bellevue Hospital system will be of great value and will, doubtless, have many followers.

DIE EPIDEMISCHE KINDERLÄHMUNG (HEINE-MEDINSCHE KRANKHEIT). Von Dr. Paul H. Römer, Abteilungsvorsteher am Institut für Hygiene und experimentelle Therapie in Marburg. Paper. Price, 10 marks. Pp. 256, with 57 illustrations. Berlin: Julius Springer, 1911.

This work will be welcomed by those interested in poliomyelitis, especially in its epidemic manifestations. It contains, in addition to the author's own well-known researches, during the epidemic of 1909 in Marburg, into the transmission of the disease to monkeys, studies in immunity, etc., a complete exposition of the whole subject from a historical, clinical, pathologic, pathogenic and therapeutic point, up to the very latest work of Flexner and Clark in this country. It deals as fully with the future, the great unsolved problems, as with that which is known. The illustrations showing monkeys to which the disease has been transmitted, and also the histology of the disease, are excellent. At this time when laymen are as interested as physicians in this mysterious disease that has seemed, at least, to have taken on new characteristics in the last decade, this little volume should find a welcome place.

MINNESOTA MUSHROOMS. Booklet IV of Minnesota Plant Studies, of University of Minnesota, Minneapolis. By Frederic E. Clements, Professor of Botany and State Botanist. Paper. Price, 50 cents. Pp. 169, with 124 illustrations.

This creditable piece of work, elaborately illustrated—partly in colors—gives rules for collecting, preparing and cooking. Particular instructions are given for recognition of poisonous specimens. The preface calls attention to the enormous annual crop, now almost wasted, either through fear or neglect. Probably the total value of mushroom crop of the state is nearly a million dollars. The pamphlet is interesting, practical and valuable. It may not particularly reduce the cost of living but it will enable many people to enjoy this easily obtained food.

Medicolegal

Construction of Statute as to Privileged Communications and Waivers of Privilege, Especially as Between Several Physicians

(Missouri & North Arkansas Railroad Co. vs. Daniels (Ark.), 136 S. W. R. 651.)

The Supreme Court of Arkansas favors a liberal construction of the statute of that state which provides that "no person authorized to practice physic or surgery, and no trained nurse, shall be compelled to disclose any information which he may have acquired from his patient while attending him in a professional character and which information was necessary to enable him to prescribe as a physician or to act for him as a surgeon or trained nurse." The court says that this enactment was manifestly made for the benefit of the patient. Its evident purpose was to throw around him a protecting shield so that he might freely and fully disclose to his physician every fact relative to his ailment with the confident knowledge that the information thus obtained could not be divulged to his injury or disgrace. Being for his benefit, the provision was adopted out of reasons of public policy as a privilege accorded solely to the patient; and, like any other privilege, it is one that the patient may waive.

By the terms of this statute, a physician is prohibited from disclosing information obtained while treating his patient, but it has been uniformly held by the courts of those jurisdictions having similar statutes that the provisions thereof must receive that construction which was intended by the legislature which framed them; and that is that the patient himself may waive the privilege of the statute in order to obtain the benefit of the physician's evidence. When this privilege is waived as to any particular witness, the opposing side is entitled to the benefit of the waiver as to such witness. But the benefit of such waiver in behalf of the adversary should not extend further than to the witness who has been called by the patient, or as to other physicians who may have been present on the same occasion to which the witness testifies.

By virtue of the statute the patient is alone given the right to remove the ban of secrecy. The patient may be willing to waive the objection of incompetency as to a particular physician in whom he reposes confidence, and yet be unwilling to waive this objection as to another, who treated him at a different time for the trouble complained of. The statute affords him this privilege, when the testimony of the offered witness does not relate to the same occasion as that from which the patient has removed the seal of secrecy.

When a patient divulges what occurred between himself and a certain physician who treated him, that would waive his privilege regarding a disclosure of all that such physician knew and all that occurred at the time that such physician treated the patient; but that would not authorize the opposing side to call another physician who might have treated the patient at another and different time for the same disease. So the court is of the opinion that the plaintiff, by the introduction of the testimony of a physician relative to his treatment of her after her injury, did not waive her privilege to object to the testimony of other physicians who had treated her prior to that time, although for the same alleged trouble.

Nor does the court consider that there was a waiver of privilege when the plaintiff was asked, on cross-examination, if the physicians whom the defendant company desired to introduce as witnesses as to her condition prior to her alleged injury had not treated her for displacement of the womb, and she denied it. The company urged that it was entitled to have the benefit of those physicians' testimony in order to contradict the plaintiff. But, if the defendant's position in that respect should be upheld, then the above statute in regard to privileged communications would be easily evaded. In any cause where the opposing party desired to obtain the testimony of an attending physician, it could be secured in like manner, although against the objection of the patient. The plain provisions of the statute forbidding such testimony by a physician cannot thus be abrogated.

Liability for Results of Bruise Followed by Cancer

(Louisville Railway Co. vs. Steubing's Administrator (Ky.), 136 S. W. R. 634)

The Court of Appeals of Kentucky affirms a judgment for $7,500 damages against the railway company for injuries sustained by Mrs. Steubing in being thrown from one of the defendant's cars as she was about to alight from it. A sudden start was alleged to have thrown her from the platform to the ground. She was a large woman. The handle of an umbrella which she had in her hand bruised her breast as she fell on the ground. She thought at the time that she was not hurt, and said so, but soon found that she was worse hurt than she supposed, and was under a physician from the time of the accident and suffered very greatly. Within six months after the accident, a tumor appeared on her breast at the point where it was bruised by the umbrella handle. It was then about as large as an English walnut, and the physician advised her to have an operation performed, but that she did not do, and about a year after that she returned to the physician, who told her that she must have the operation performed at once. The tumor had then developed into a cancer of the breast. The operation was performed, but she died not long afterward.

It was earnestly insisted that all the evidence as to the cancer should have been excluded from the jury, as it was not shown that that was the direct and proximate result of the injury. That, however, the court answers by saying that the testimony of the physicians introduced on behalf of the plaintiff was to the effect that 15 per cent. of cases of cancer of the breast may be traced back to a traumatic injury; that the cause of cancer is unknown, and that it is not known that the injury in these cases was the cause of the cancer. But the physicians gave it as their opinion that in a glandular structure like the breast, where the circulation is very extensive, there are what are called embryonic cells, and that a bruise would start an embryonic cell to growing and develop into a growth different from the original growth; that falling from a street car, and having an umbrella punched into her breast, would be a sufficient or probable cause for the condition in which they found her; that the injury would not cause the cancer, but it might bring about a condition which would result in it when a cancer would not have otherwise existed; that any chronic inflammatory condition in the breast was liable to bring about such a condition, and that a great per cent. of the tumors of the breast in women took on at some time malignancy. These physicians stated facts sustaining the view which they advanced, and the defendant offered no contradictory evidence. The proof for the plaintiff was to the effect that Mrs. Steubing was a strong, healthy woman, without an ache or a pain until her injury; that after that she was never without pain, and the severity of her sufferings, as well as their constancy, tended strongly to confirm the conclusion of the physicians that the malignant cancer was the result of the bruised condition of the breast which she received in the fall. At any rate, there was sufficient evidence on that point to go to the jury.

Liability of Masseurs for Practice of Medicine—When Law Took Effect

(Dankworth vs. State (Tex.), 136 S. W. R. 783)

The Court of Criminal Appeals of Texas affirms a conviction of the defendant Dankworth of unlawfully practicing medicine. He claimed to be a masseur. The state's witness testified that he took his wife, who was suffering with some female disease, to see the defendant, and he said he could cure her. He said that she needed a wash for use at home, and said that he would call at the drug store and have it put up, which was done. He treated her at his home, and charged $20. The court says that, under its holdings that those who, for pay, practice massage for the cure of disease, practice medicine, it became immaterial whether or not a charge was made for the prescription at the drug store.

The jury was instructed that the provisions of the medical practice act of 1907 do not apply to masseurs in their particular sphere of labor, who publicly represent themselves as

such; but a masseur is not permitted under the law to treat, or offer to treat, diseases or disorders, mental or physical, or to effect cures thereof, and charge therefor, directly or indirectly, money or other compensation. This charge was in accordance with the decisions of this court.

It was insisted that the medical practice act approved April 17, 1907, did not become effective until one year and ninety days after the adjournment of the legislature, on April 12, 1907; but the court does not think that such contention was the proper or legitimate conclusion to be placed on the act. The act itself became effective within ninety days after the adjournment of the legislature—on the 12th day of July, 1907. In the act, in Section 6, it is provided: "Within one year after the passage of this act all legal practitioners of medicine in this state, who, practicing under the provisions of previous laws, or under diplomas of a reputable and legal college of medicine, have not already received license from a state medical examining board of this state, shall present to the Board of Medical Examiners for the State of Texas documents, or legally certified transcripts of documents, sufficient to establish the existence and validity of such diplomas or of the valid and existing license heretofore issued by previous examining boards of this state, or exemption existing under any law," etc. Laws in force prior to the passage of that act required the diploma or license of a physician to be filed and recorded in the office of the clerk of the district court in the county in which one proposed to practice, and inasmuch as the defendant testified that he never filed in any county a license to practice medicine, the exceptions in the act could not avail him. If he had held a diploma from a reputable or legal college of medicine, or a license issued by previous examining board, it would have been a matter peculiarly within his knowledge, and if he had relied on that as a defense he should have made that proof.

Action for Malpractice Barred by Statute of Limitations

(Lotten vs. O'Brien (Wis.), 131 N. W. R. 361)

The Supreme Court of Wisconsin reverses a judgment obtained by the plaintiff and directs that the complaint be dismissed because it holds that the alleged right of action for malpractice was barred when the action therefor was commenced on November 13, 1909. The court says that the complaint charged that on August 24, 1908, the plaintiff employed the defendant to set, etc., a broken arm. It appeared that the acts of negligence complained of took place not later than September 26, 1908, when the treatments by the defendant ceased. The mere fact that there was no discharge of the defendant on that date would not change this result. The statute of limitations began to run when the cause of action accrued and this accrued when the negligent acts were committed, without reference to the time of discharge. The real negligent act which caused the injury to the plaintiff was the improper setting of the bones in his arm. The negligent omission to discover this occurred at such dates and times as the defendant undertook to examine, treat, and care for the disabled arm. At that time the Wisconsin statute of limitations applicable was one of one year, and the limitation of one year having begun to run when the two-year act of 1909 went into effect, and the latter act providing a new period of limitation, the former limitation statute was continued in effect as to such former acts under Wisconsin law.

A Physician Cannot Testify as to Examination Made to Aid Compromise

(Woodward vs. Southern Railway Co. (S. C.), 70 S. E. R. 1060)

The Supreme Court of South Carolina holds that, there being evidence that the plaintiff's counsel and an agent for the defendant entered into negotiations looking to a compromise settlement of the plaintiff's claim, for personal injuries, and that, in the course of these negotiations, and in furtherance of them, it was agreed that a certain physician should make an examination of the plaintiff, to ascertain the extent of his injuries, evidence of disclosures made by either party to the other, directly or indirectly, in negotiations for a compromise, not being admissible, testimony of the physician as to the examination was properly excluded.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Journal of Infectious Diseases, Chicago

September

1 *Local Production of Antibodies. L. Hektoen, Chicago.
2 *Resistance of Tubercle Bacilli to Dry Heat. C. Krumwiede, New York.
3 Effect on Protoplasm of Nitella of Various Chemical Substances and of Microorganism Introduced into the Cavity of Living Cell. M. A. Barber, Kansas City.
4 *Antistreptococcus Serum. G. H. Weaver and R. Tunnicliff, Chicago.
5 Studies on Chemistry of Anaphylaxis. Experiments with Isolated Proteins, Especially Those of the Hen's Egg. H. G. Wells, Chicago.
6 *Bactericidal Action of Quinone and Other Phenol Oxidation Products as Determined by Rideal-Walker Method. W. Thalhimer and R. Palmer, Charlottesville, Va.
7 Pneumococcus Anaphylaxis and Immunity. E. C. Rosenow, Chicago.

1. **Local Production of Antibodies.**—The results obtained from experiments by Hektoen do not point to any local production of specific antibodies in dogs injected with goat or rat corpuscles, at least not so far as concerns the tissues about the anterior chamber of the eye, the tissues of the pleura, and the subcutaneous tissues.

2. **Resistance of Tubercle Bacilli to Dry Heat.**—Krumwiede found that air-dried tubercle bacilli are many times more resistant to dry heat than are bacilli heated in fluids or steam.

4. **Antistreptococcus Serum.**—Antistreptococcus serums were found by Weaver and Tunnicliff to lose their opsonic power rapidly, which may for some time be largely restored by the addition of fresh human or guinea-pig serum. Guinea-pigs may be protected against virulent cultures of streptococci by previous injection of antistreptococcus serums. The protective power of immune serums continues so long as they can be reactivated by fresh serum. Injections of immune serums in guinea-pigs may be followed by increased activity of leukocytes of short duration and by an increased opsonic power for streptococci in the blood-serum persisting for about ten days. The immunity in guinea-pigs produced by injection of immune serum persists for about eight days. Of three fresh commercial serums manufactured in the United States which were tested, two were active and one inactive. The two European serums were active. Fresh normal human serum and fresh human serum from persons infected with streptococci are able to reactivate antistreptococcus serums. This indicates that such serums may have some protective and curative effect in man in cases of streptococcus infections. The specific antistreptococcus bodies are resistant to heat and chemicals (trikresol, 0.4 per cent. chloroform) and are closely associated with the pseudoglobulins of the immune serum. The authors stated that it would be desirable to have some guarantee of the activity of antistreptococcus serums offered for sale.

6. **Bactericidal Action of Quinone.**—Thalhimer and Palmer found quinone the most efficient bactericidal substance yet reported; phenol-quinone is less active than quinone, and hydroquinone still less so. They emphasize that many of the commonly-used disinfectants and antiseptics, such as bichlorid of mercury, formaldehyd, argyrol, protargol, etc., are relatively inefficient in strengths used. Iodin, alcohol in strengths above 50 per cent., and silver nitrate in solution of 1-1,000 are very efficient bactericidal agents. Potassium cyanid and hydrocyanic acid, although powerful organic poisons, have a weak bactericidal action. The phenol coefficient of crude phenol is 4, of trikresol is 2.2 and of parakresol is 2.8, thereby disproving the statement that a combination of all three cresols is more powerful than any one of them. Beta-naphtol and sodium hydroxid neutralize one another's bactericidal action, and this would also occur in the intestine and so render the former substance useless as an intestinal antiseptic. The work of recent observers and the authors' results indicates the advantage of getting away from the use of bichlorid in surgical technic and the substitution for it of tincture of iodin and 50 per cent. alcohol.

American Journal of Obstetrics, New York

September

8 *Repeated Ectopic Pregnancy. R. R. Smith, Grand Rapids, Mich.
9 *Hydatid Mole. H. N. Vineberg, New York.
10 Pathology of Hydatid Mole and Chorio-Epithelioma and Their Relation to Normal Pregnancy. R. T. Frank, New York.
11 Pelvic Infections (Gonorrheal). J. Brettauer, New York.
12 Puerperal Infections. J. O. Polak, Brooklyn.
13 *Radical Treatment of Pelvic Inflammation. E. P. Davis, Philadelphia.
14 Strangulated Inguinal Hernia in the Female. H. A. Royster, Raleigh, N. C.
15 Treatment of Breast Cancer. T. Abbe, Washington, D. C.

8. Abstracted in THE JOURNAL, July 8, 1911, p. 162.

9. **Hydatid Mole.**—Of Vineberg's three cases following hydatid mole, two patients were operated on four years ago; one patient is in good health at the present time; the other was lost sight of shortly after leaving the hospital, when he was fully convalesced. The third patient was operated on five months ago. A couple of weeks after her discharge from the hospital, a small bleeding growth appeared in the vaginal scar. Suspecting a recurrence Vineberg excised it but the pathologist could not detect any evidence of chorioepithelioma in it. She is in excellent health, and the vaginal vault is smooth and perfectly healed.

13. **Treatment of Pelvic Inflammation.**—It is emphasized by Polak that curettage, douches and examinations during the acute stage of puerperal infection, break down natural barriers and open avenues for further dissemination of sepsis to the myometrium, parametrium and adjacent tissues, and that the danger from curettage increases as the period of pregnancy advances. The endometrium should never be curetted in acute streptococci infection, neither should the placental site ever be curetted. Instrumental evacuation of the uterus should be limited to pregnancy of eight weeks or under: digital exploration and digital curettage is the most rational method of learning the contents of the uterus. After the uterus is once thoroughly emptied, the pelvis should be left absolutely alone, except for postural drainage, and we should make every effort to support the patient and increase her natural blood resistance. If the blood-stream is sterile, and the blood shows a leukocytic resistance to the infection by a relative white cell increase, the prognosis is favorable, it matters not what form of cocci are found within the uterine cavity. Polak says, never disturb a local exudative focus postpartum, as long as the patient shows signs of improvement, unless there is definite evidence of a localized collection of pus, this should be opened by extra-peritoneal incision. Exudative pelvic peritonitis may be considered as a sequel of untreated or badly treated endometritis.

Thrombophlebitis is a conservative process on the part of nature, and manipulation or examination tends to break off infected emboli, and disseminate the infection to the remote parts of the body. Nature is competent in the majority of cases to localize and circumscribe the infection. Enormous pelvic and abdominal exudates may disappear without operation, and in time enlarged ovaries, tubes, etc., assume their proper size and function, and as long as the patient's general condition improves, no surgery is advisable. All operations are attended with less risk after the acute stage of the infection has subsided, and an exact diagnosis is more easily made at this time; and finally, vaccines have a definite field and are valuable adjuncts to the therapeutics of puerperal infection.

Military Surgeon, Washington

September

16 Asiatic Cholera. J. R. Hurley, Washington, D. C.
17 San Diego Maneuver Camp. C. W. Decker, San Diego, Cal.
18 Galveston Maneuver Camp. J. H. Ford, U. S. A.
19 *Lime Salts for Troops. W. T. de Niedman, U. S. A.
20 Treatment of Malaria by Salvarsan. M. A. Reasoner, U. S. A.
21 Dislocation of Malar Bone. R. P. O'Connor, U. S. A.
22 Chronic Interstitial Nephritis with Very Obscure Symptoms. G. B. Tuttle, U. S. A.
23 Miscellaneous Notes. R. C. Matson, Portland, Ore., and M. A. Reasoner, U. S. A.
24 Experiments Undertaken to Test Efficacy of Ipecac Treatment of Dysentery. E. B. Vedder, U. S. A.

19. **Lime Salts for Troops.**—The use of calcium lactate and permanganate is held by de Niedman to be particularly desirable during active campaigning under circumstances where the soldiers have to use drinking-water from questionable sources. He is satisfied that calcium permanganate added in definite quantities to drinking-water would act as a prophylactic and would prevent contracting dysentery and other enteric fevers, while calcium lactate, taken with food, would replace the deficiencies of lime salts in the various articles of the diet, thereby minimizing the tendency to the numerous inflammatory intestinal troubles often met and which cannot be rightly traced to careless preparation of food, or to drinking-water. It is his opinion that the routine use of lime salts under certain conditions would be of great benefit to troops serving for a prolonged period in the field or in the tropics.

Mississippi Medical Monthly, Vicksburg

September

25 *Treatment of Appendicitis by Hypodermic Injection of Colon Bacteria. H. M. Folkes, Biloxi.
26 Drops in Syphilis. H. L. Walker, Hot Springs, Ark.
27 Acute Enteritis. W. H. Frizell, Brookhaven.
28 Intestinal Obstruction Due to Intussusception and Volvulus. J. C. Walker, Houlka.
29 Medical Treatment of Appendicitis. J. W. Jordan, Lexington.

25. **Treatment of Appendicitis.**—Thinking that possibly the infection in a case of appendicitis was due to colon bacilli, and not being permitted to operate, Folkes concluded to try an injection of colon bacteria which he did by giving 200,000,000. Within twenty-four hours the temperature had gone to normal, pulse 102, facial expression natural, patient comfortable. The tumor, *pari passu*, became smaller and smaller and ten days after the injection had entirely disappeared. The patient is as well as ever.

Washington Medical Annals

September

30 Iodin as Antiseptic, with Special Reference to Sterilization of Skin. I. S. Stone, Washington, D. C.
31 Suspensions of Salvarsan in Oil. H. H. Hazen, Washington, D. C.
32 Borderland Between Internal Medicine and Psychiatry. W. A. White, Washington, D. C.

Journal of Kansas Medical Society, Kansas City

September

33 Vaccines and Vaccine Therapy. C. J. McGee and P. B. Matz, U. S. A.
34 Complete Atresia of Vagina and Case Complicated by Hematotrachelos, Rudimentary Uterus, Operation. R. S. Harvey, Newton.
35 One Hundred and Thirty-Five Cases of Obstetrics in Country Practice. F. A. Carmichael, Goodland.
36 *Case of Automatic Shedding of Gall-Bladder. H. G. Welsh, Hutchison.

36. **Automatic Shedding of Gall-Bladder.**—On the basis of a diagnosis of appendicitis Welsh opened the abdomen in the region of the appendix and found a good-sized abscess well walled off. The patient was in such an extreme condition that he decided not to remove the appendix as it appeared to be well covered up with adhesions, so he packed the abscess cavity with gauze and hurried the patient to bed, and ordered normal salt solution per rectum. The patient had only a slight rise in temperature at the time he entered the hospital and this did not change much for several days, running from ½ to 1½ degrees above normal. The patient began to improve, however, the gauze drain being removed on the fourth day, and replaced with smaller gauze packing each day thereafter. On the fifth or sixth day a fecal fistula developed and bowel contents discharged freely for a few days and then healed. About the fourteenth day after operation, a black object appeared in the wound at the morning dressing and looked very much as though it was a portion of gangrenous gut. The patient was improving daily, was much stronger and Welsh did not think the substance was bowel, although it looked and felt like it. When the gauze was pulled out of the wound the mass came out with it, and at first sight it looked like a piece of gangrenous gut about 5 inches long by 2 inches in diameter, with an opening at the smaller end, and about half full of a semi-solid or mushy contents. It was the whole gall-bladder. Two or three days after the shedding of the gall-bladder, bile began to discharge freely through the wound and did so for several days, and then ceased and the wound gradually healed. No gall-stones were found at the operation, and none passed through the wound afterward.

Maryland Medical Journal, Baltimore

September

37 Prevention of Inebriety. G. M. Linthicum, Baltimore.
38 Laboratories and Medicine. H. W. Stoner, Baltimore.

Journal of Medical Research, Boston

September

39 Vaccination of Cattle Against Tuberculosis. T. Smith, Boston.
40 *Organic Matter in Expired Breath. M. J. Rosenau and H. L. Amoss, Boston.
41 *Study of Primary Intimal Arteritis of Syphilitic Origin. F. B. Gurd and H. W. Wade, New Orleans.
42 *Rapid Isolation of Typhoid, Paratyphoid and Dysentery Bacilli. A. I. Kendall and A. A. Day, Boston.
43 Investigation on Permeability of Slow Sand Filters to Bacillus Typhosus. E. B. Beasley, Boston.
44 *Certain Fundamental Principles Relating to Activity of Bacteria in the Intestinal Tract; Their Relation to Therapeutics. A. I. Kendall, Boston.
45 *Tuberculosis Among Ground Squirrels (Citellus Beecheyi, Richardson). G. W. McCoy and C. W. Chapin, San Francisco.
46 Precipitation Tests for Syphilis. L. W. Strong, Boston.
47 Twenty-Two Spontaneous Tumors in Wild Rats. P. G. Woolley and W. B. Wherry, Cincinnati.
48 Isolation of Typhoid Bacilli from Urine and Feces with Description of New Double Sugar Tube Medium. F. F. Russell, Washington, D. C.
49 *Isolation of Bacillus Typhosus from Butter. D. H. Bergey, Philadelphia.
50 *Peptid-Splitting Enzyme in Woman's Milk. L. M. Warfield, Milwaukee, Wis.
51 Carcinoma Involving Entire Kidney. L. S. Milne.
52 Thrombo-Angeitis Obliterans. H. Brooks, New York.
53 Value of "Hormone" Theory of Causation of New Growth. I. Levin and M. J. Sittenfield, New York.

40. Organic Matter in Expired Breath.—Through the reaction of anaphylaxis the presence of organic matter was demonstrated in the expired breath by Rosenau and Amoss. In brief the method consisted in condensing moisture from the expired breath of man and injecting the liquid so obtained into guinea-pigs. After a suitable interval (at least two weeks) the guinea-pigs were injected with normal human blood-serum. Ninety-nine guinea-pigs were thus tested in twenty-five different experiments; of the ninety-nine, twenty-six gave definite symptoms of anaphylaxis; this does not include the animals showing suggestive or mild symptoms; in four the reaction was so severe that death ensued from anaphylactic shock. The expired breath of eight persons was tested; of these five gave positive reactions; on each of the remaining three, only one experiment was made. This organic matter must, according to the interpretations of our knowledge of anaphylaxis in the guinea-pig, be protein in nature. Guinea-pigs may be sensitized only with protein substances higher in the scale (that is, more complex) than the peptones. Further, this protein substance is specific and for the present it is assumed to come from the blood. The indications are that this organic matter is probably present in variable amounts, although the reaction is a qualitative and not a quantitative test.

The logical conclusion at which the authors arrive is that protein substances may be volatile. It seems unlikely that such a complex molecule should possess the power of passing into the air in a gaseous form. The volatility, however, now in question may resemble that solubility which deals with particles in suspension in a physico-chemical state (colloidal suspension). The protein may simply be carried over in "solution" in the watery vapor. The fact that organic matter is present in the expired breath does not mean that these substances are poisonous. It is evident, however, that the air contains many substances which we cannot at present discern, some of which may have an important bearing on health. Thus it is well known that most of the cases of sudden death following the first injection of horse-serum (diphtheria antitoxin) occur in adults. Children rarely give a severe immediate reaction at the first injection. How the adults become sensitized has always been a mystery. It may now be assumed that some susceptible persons may absorb, through the lungs, enough horse protein, from close association with horses to become sensitized. The fact that the expired breath contains definite amounts of specific organic substances will also have an immediate bearing on the problems of ventilation and the effects of vitiated air.

41. Primary Intimal Arteritis.—The authors maintain that total occlusion of vessels having a complete anatomic structure does result from the simple proliferation of the intima. Syphilis must be recognized as one of the factors potent to induce this lesion. Although nourishment for the inner layers of the media may be derived from the circulating blood in the lumen of the vessel, their preparations showed that such a method of nutrition is by no means necessary. In occlusion taking place in this manner, endothelial proliferation is primary, this being followed by subendothelial fibrous tissue hyperplasia. The vascularization of this proliferated tissue takes place by the growth inward of vessels from the adventitia. Necrosis in syphilis results both by the formation of tubercle-like nodules by the proliferation of cells with breaking down in the center, and also as the result of obliteration of vessels as the result of an intimal proliferation.

42. Rapid Isolation of Bacilli.—The modified Endomedium used by Kendall and Day contains 15 gm. of agar per liter instead of 40 gm. The colonies developing in 15 gm. agar are much larger in eighteen hours than those similarly grown in 40 gm. agar. The colonies are also more distinct. The reaction of the agar is made just alkaline to litmus, instead of being strongly alkaline to it; consequently those bacteria-forming acid bring about their characteristic changes very promptly because there is less alkali to be neutralized before the acid can assert itself. After eighteen hours' incubation on the medium modified as above, suspicious colonies are removed entire to small tubes containing 1 c.c. of sterile sugar-free broth, which has been kept at 37 C. previous to use and incubated in them at 37 C. for two hours. While the incubation is taking place, the sera are diluted ready for use. The cultures are then agglutinated with appropriate sera and watched for two hours. At the end of that time the results are reported. The whole procedure as outlined requires about twenty hours.

44. Activity of Bacteria in Intestinal Tract.—The cases studied on the Boston Floating Hospital during the summer of 1910 numbered thirty-nine. Nineteen patients died and twenty survived. Of those that died eight received no sugar; they were among the earliest studied, and it was from a study of the flora of this group that the ideas employed in the attempt to aid the others originated. Of those receiving sugar, and which died subsequently, two were on a modified milk diet previous to the use of lactose. One reacted very well both clinically and culturally to the sugar treatment, convalesced, and was doing very well on a milk modification. Finally she contracted a severe attack of acute bronchitis and had not strength enough to rally. Two patients died within three days of admission, too early to get the results of the lactose treatment, for the lactose was not given as a rule until after two or three days' starvation on sterile water. One patient was placed on lactose for eleven days, did very well, then on a milk mixture five days, still with improvement, then on Eiweiss milk. She died very shortly after. Two cases were pure Shiga bacillus infections, and terminated fatally rather promptly. This is the usual rule with pure Shiga infections, when the patients are seen as late in the disease as were many of those at the hospital last summer. Of the remainder one survived nine days on lactose, then died. The patient did not show the expected change in flora, and the question arises, were there vestiges of the fermentative flora to encourage? Obviously, if there were no fermentative organisms to start the new flora it could not develop. One patient died after twenty days' illness on the boat: six days of lactose, two of sterile water, then ten of lactose. The first two days were on sterile water. The last patient was placed on lactose solution for fourteen days, then on a milk mixture. She reacted very well bacterially, and no definite explanation of the cause of death can be advanced (syphilis?).

45. Tuberculosis Among Ground Squirrels.—Five cases of natural tubercle infection in ground squirrels have been observed. The gross pathology in these animals was as follows: Two had lesions of the lymph-glands alone, one of the lungs alone, one of the lungs and the omentum, and one of the liver alone. As compared with a human strain of the same age and number of generations, the growth on artificial media was far less luxuriant than that of the culture derived from man. The virulence of the squirrel cultures, judged by their effect on rabbits, agrees with that of the bovine type of *B. tuberculosis*.

49. **Isolation of Bacillus Typhosus from Butter.**—Altogether, eight samples of butter obtained from the institution were studied by Bergey and typhoid bacilli were found in one of the samples. The special agar media that seemed to be most helpful, in that it was possible to pick out the colonies of *B. typhosus* from amongst the colonies of other bacteria in the butter, were the Drigalski-Conradi agar and the malachite green agar. No typhoid organisms were recovered from the plates made with the endomedium. Bergey thinks that this result is probably due to the fact that the endomedium may not have been properly prepared, though four different batches of it were tried. These special agar media are rather difficult to make up, as the original descriptions are somewhat involved and the process is rather long. From the results obtained it is evident that these special media are of great value, under certain circumstances, for the recovery of *B. typhosus* from infected food materials. After the sample of butter which contained the typhoid bacilli had been in the ice-chest for several weeks it was impossible to isolate any additional typhoid bacilli from it. Whether this was due to the fact that the organisms had all died out or whether they were not uniformly distributed Bergey does not state.

50. **Peptid-Splitting Enzyme in Woman's Milk.**—Warfield found tryptophan present in the mixture of human milk and glycyltryptophan. This ferment is destroyed by heating the milk to 75-80 C. or above. When the specimen of milk is rendered faintly acid by the addition of either HNO_3 or HCl, there is no splitting of glycyltryptophan. Controls of untreated, normal milk and part of specimen treated, were always incubated for the same length of time. The controls were always positive for tryptophan.

Interstate Medical Journal, St. Louis

September

54 Treatment of Bacillary Dysentery. F. S. Meara, New York.
55 Case of Hemochromatosis with Diabetes. W. P. Elmer, St. Louis.
56 Some General Considerations in Regard to Right Hypochondriac Pain. J. D. Heard, Pittsburgh.
57 *Fallacy of Warmed Ether Vapor. M. G. Seelig, St. Louis.
58 Inflammatory Tumors Producing Intestinal Obstruction. A. Primrose, Toronto.
59 An Estimate of Freud's Theory of Neuroses, Its Value to the Neurologist. S. I. Schwab, St. Louis.

57. **Warmed Ether Vapor.**—Seelig says we may rest content with the simple fact that a warmed vapor will not stay warmed unless it is held under pressure. We have been led astray in our reasoning by the sight of ice crystals on the ether mask, or frost on the nitrous oxid gas cylinder. Indeed, we have been led so far astray as to lose sight of one of the fundamental facts in the administration of anesthetics, namely, when ether is administered by the drop method, its rapid evaporation robs the surrounding atmosphere of latent heat, thus perceptibly cooling it. This cooled air can take up only a moderate amount of ether vapor by reason of the fact that it is cooled, and thus we are furnished with a safeguard against oversaturating the patient with ether. This physical fact it is, which has contributed so much towards making the open method of administering ether so safe and therefore so popular. If we bear in mind the rapidity with which vapors part with heat, we shall probably not concern ourselves much with securing special warming apparatus.

Journal of Michigan State Medical Society, Battle Creek

September

60 Obstetrics in the Home. C. E. Boys, Kalamazoo.
61 Some Pertinent Facts Concerning State Sanatorium. E. B. Pierce, Howell, Mich.
62 Physician as Financier? W. A. Griffin, Deckerville, Mich.
63 Laryngeal Complications of Tuberculosis. N. P. Levin, Detroit, Mich.
64 Pelvic Tumors in Female. W. P. Manton, Detroit, Mich.
65 Fractures. C. H. Sample, Saginaw, Mich.

Albany Medical Annals, New York

September

66 *Anatomy and Pathogeny of Agenesia of Corpus Callosum. L. Archambault, Albany, N. Y.

66. **Agenesia of Corpus Callosum.**—A very complete study was made by Archambault of the clinical history and postmortem findings of a case of agenesia of the corpus callosum. He says that in cases of so-called agenesia of the corpus callosum, we have to do merely with an abscess of the callosal commissure proper. In a considerable number of cases, fetal hydrocephalus is the underlying cause of this anomaly. This lesion may act either by destroying a large part of the periventricular callosal layer, or by determining ventricular symphysis which then interferes mechanically with the development of the callosal commissure. The occipito-frontal fasciculus simply represents, as Sachs originally maintained, a heterotopy of the corpus callosum. It does not exist in the normal cerebrum. The fornix is formed not only by fibers derived from the gyrus hippocampi but also by fibers which originate in the gyrus fornicatus and reach it by traversing the corpus callosum. The internal sagittal layer of the frontoparietal lobe, the reticular zone of Sachs, represents the corona radiata of the gyrus fornicatus or first limbic convolution. The anterior commissure probably enters into the constitution of the temporal segment of the tapetum. Aside from this possible element, the tapetum is formed exclusively by the fibers of the corpus callosum.

St. Paul Medical Journal

September

67 Bursæ and Exostosis (Spurs) of Os Calcis: Report of Cases. A. R. Colvin, St. Paul.
68 Bonds vs. Mortgages as Investments for Physicians. E. White, St. Paul.
69 Farm Mortgage as Investment for Physicians. W. Wheelock, St. Paul.

American Journal of Diseases of Children, Chicago

September

70 *Case of Scaphocephalus with Retinal Changes. A. W. Fairbanks, Boston.
71 Muscular Hypertrophy of Pylorus in Infancy. H. L. K. Shaw and T. Ordway, Albany, N. Y.
72 *Albumin-Milk in Infant Feeding. C. G. Grulee, Chicago.
73 Protein Metabolism in Infants and Children. H. Schwarz, New York.
74 *Case of Infection of New-Born. L. Taylor-Jones, Washington, D. C.

70. **Scaphocephalus with Retinal Changes.**—The symptoms in the case cited by Fairbanks strongly point to an intracranial tumor. The classic general symptoms presenting themselves in a strikingly typical manner, headache, vomiting, optic neuritis and choked disks with retinal hemorrhage. The symptoms were so intense that the child was twice admitted to the hospital with a view to using a radical palliative decompression operation. The abnormal shape of the head was thought to be a congenital deformity, without connection with the active and serious clinical phenomena. Eye examination showed 2 mm. swelling of the disk and beginning signs of organization. It was thought that there was slightly less coordination and power in the right upper extremity than in the left, but this was always questionable. No other signs were present. His gait, even with his eyes closed, was excellent. From this time to the time of making this report (six months), he was perfectly well subjectively, and presented no abnormality, except the cranial deformity and the changes in the retina.

72. **Albumin-Milk in Infant Feeding.**—Grulee's report consists of thirty cases, of which twenty-five are of nutritional disturbances and five of parenteral affections. Of these cases, five were dyspepsias, with four recoveries and one failure; seventeen were decompositions, with two failures and three deaths. Of those classified as failures, both were cases which could not be controlled. Of the deaths, one was the first infant on which the albumin-milk was used and the albumin-milk period was preceded by a long period of decline; one death resulted from erysipelas. In one case of intoxication the infant made a beautiful recovery. In this case a modification of the albumin-milk was used. Instead of suspending the curds in the buttermilk, barley-water was used, and this in turn gradually replaced, 1 ounce or 2 ounces at a time, with buttermilk. In this case the above procedure did good service. One of the cases in this series was an infant a few days old, of comparatively good health, which thrived well on the food. Another case, aside from a rather severe rickets and furunculosis of the scalp, showed no disturbance and yet went steadily down hill and died a month or six weeks after leaving the hospital.

Of the five cases of parenteral affections, three infants died, one was but slightly improved, while one made an excellent recovery. One of those which died had a very severe anemia

pseudoleukemica infantum, one was afflicted with subcutaneous abscesses which were very bad at the start and cleared up entirely for some days, then began again and during the second attack the child died. The third was a case of intestinal tuberculosis. The infant which improved only a little was one with syphilitic hydrocephalus; the other case was an ordinary case of congenital syphilis.

In the twenty-five instances of nutritional disorder there were eighteen recoveries, three failures and four deaths. Of the deaths, two only were uncomplicated nutritional disorders. Of the failures, no infant was on the albumin-milk longer than twelve days, one being taken off the food because of a rather alarming loss of weight in the first week. In no mild case in which it was thought that the infant would thrive on the usual milk mixtures was the albumin-milk given. This is shown by the fact that fifteen of the twenty-five cases were in infants 4 months or under. Quite interesting was the rapid fall and rise of the weight-curve. This occurred usually in more severe cases and often a drop of 4 to 5 ounces in twenty-four hours would be registered, with a quick return to a point above that before the drop.

74. **Infection of the New-Born.**—This baby, which had been apparently perfectly healthy for ten days of its life, died when 12 days old, of a streptococcus infection whose course was by the way of the umbilicus through the left hypogastric artery. At no time was there any sign other than perfect health at the navel. Taylor-Jones could not say when the infection occurred, but it would seem that the most reasonable presumption would put it at the time of, or soon after, the separation of the cord on the fourth day. The physiologic thrombus of the left hypogastric would probably not be broken down by sepsis for several days, and several more days might be required to have the circulation of the organisms in the blood show evidence by elevation of temperature and external signs. Taylor-Jones surmises that had it taken place at the time of birth, infection would probably have manifested itself several days earlier because of the organisms passing directly into the blood-current, before formation of the thrombus.

Journal of Minnesota State Medical Association and Northwestern Lancet, Minneapolis

September 1

75 Visit to Some Hospitals and Surgical Clinics of France. W. J. Mayo, Rochester, Minn.
76 *Early Symptoms and Diagnosis of Pulmonary Tuberculosis. J. L. Anderson, Powers Lake, N. Dak.
77 Direct Electrical Current in Scientific Medicine. B. T. Green, Brookings.
78 Physical and Medical Supervision of Children. J. W. Robertson, Litchfield, Minn.

76. Abstracted in THE JOURNAL, July 8, 1911, p. 159.

Boston Medical and Surgical Journal

September 7

79 Suits for Alleged Malpractice. G. W. Gay, Boston.
80 *Some Comments on Probable Direction of Future Progress in Treatment of Chronic Joint Diseases. H. W. Marshall, Boston.
81 *Humidity and Health. P. W. Goldsbury, Warwick, Mass.
82 Case of Pellagra. C. H. Dean, Northampton, Mass.

September 14

83 Thoracic Surgery. J. G. Mumford, Boston.
84 Treatment of Empyema. F. B. Lund, Boston.
85 *Bronchiectasis and Abscess of Lung. S. Robinson, Boston.
86 Chest Traumata. F. T. Murphy, Boston.
87 Use of Esophagoscope in Esophageal Surgery. H. P. Mosher, Boston.
88 Value of Roentgen Rays in Diagnosis and Treatment of Fractures; Moral and Legal Obligations. H. A. Lothrop, Boston.
89 Suits for Alleged Malpractice. G. W. Gay, Boston.

80. **Progress in Treatment of Chronic Joint Diseases.**—Reasons and data are given by Marshall to show how greater accuracy in diagnosis; greater skill in applying remedies accurately according to physiologic needs of the tissues; discoveries of new methods of treatment through development of many medical researches; improvements in surgical knowledge and skill; and more keen appreciation of the advantages of preventive measures will all favorably influence progress in treatment of chronic arthritis. Simultaneously with increase in efficiency of such treatments there will develop greater confidence among patients with regard to medical understanding of joint diseases, and this of itself will be an additional advantage, if existing practices that are so fatal to satisfactory results can be minimized, namely, the habit which patients have of wandering from one physician to another, trying indiscriminately many cures until hope of recovery has passed and their joints are worn out and damaged beyond repair while attempting to restore their normal function.

81. **Humidity and Health.**—The beneficence of moisture is emphasized by Goldsbury. He says that the problem of constructing buildings in such a way as to keep the interior up to a fair degree of humidity is a large one. So far engineers have made little practical progress toward its solution. Their ingenuity has been taxed to improve the moisture in large public buildings. The devices for this have so far proved too expensive for private dwellings, hotels, offices or schoolhouses. Another difficulty has been to arouse public opinion on the subject, or to convince of its importance. Americans complain of the drafty, poorly heated buildings abroad, but American houses are both too nearly air-tight and too much heated for ideal humidity. Too little of the moist fresh air enters; and this, under the rising temperature, has its relative humidity greatly lowered. The situation calls for some special measures.

Clothing and covering of the body interferes more or less with an equal shading of humidity and evaporation and circulation of the air directly over the skin. Advantage may be taken of this fact. If the skin is allowed to enjoy longer periods of freedom from clothing upon retiring or rising, or when they are being changed, the body will be bathed more equally by air of a like degree of humidity and should benefit from such baths. Clothing which permits freer circulation of air is a step in this direction, but this whole subject can be reserved to a later discussion. If one must live much indoors he may improve the temperature of his rooms by various devices, such as keeping growing plants and setting about porous dishes, as flower pots full of water. If such receptacles are set near electric fans the stirring of the air facilitates evaporation. Some housekeepers have even placed such pots within the radiator.

There are some objections to the use of plants, such as the amount of care they require, the space they occupy and the physiologic effects of their odors and gaseous exhalations. Those who love plants, however, may get encouragement from the fact that the beauty and fragrance are joined with a humbler and inconspicuous but very much needed service. Porous vessels, too, demand some care. If they are not covered dust will gather within them, evaporation will be retarded and the water itself will grow foul. The vessels should be covered or closed and the water changed occasionally to keep all fresh. As with plants, the esthetic sense may be satisfied along with the useful. Pottery may be formed to furnish an elaborate amount of evaporating surface and at the same time artistically designed.

Goldsbury says that there is nothing for humidity like the out-of-doors. Even though the humidity may range from that of parched Arizona to that of the English Channel, it is so admirably adjusted to the environment on nature's gigantic scale, and so likely under the vast majority of conditions to be superior to anything that can be produced artificially, and it is so bound up with advantages of other sorts, that the Great Open must be the common refuge, and to the natural we must turn in our search after the ideal. Conditions indoors may and must be improved; conditions outdoors wait to be enjoyed.

85. **Bronchiectasis and Abscess of Lung.**—From sixteen cases of abscess which he has seen, eight of which he has operated on, Robinson has come to prefer the responsibility of finding the abscess rather than risk operation at that late stage when the patient's resistance has been lowered during prolonged observation and repeated negative explorations. Continued expectant treatment may result in a fetid empyema. Drainage of such empyemata in the presence of abscess is attended with high mortality. The operative mortality of uncomplicated acute abscess should be less than 8 per cent. in cases which have not been delayed by lack of diagnosis or prolonged observation. He says that exploration for deep

abscess, in the complete absence of adhesions, is more safely performed under differential pressure, the use of which, to say the least, increases confidence. Furthermore, many recent experimental investigations have bettered the technic of opening and closing the chest, and a negative exploration should be devoid of complications.

Operative infection of normal pleura, and postoperative pneumothorax should, nevertheless, be avoided in every possible instance. A careful search before and during operation for an area where adhesions are present will prevent the opening of the free plural cavity. In his six cases of acute abscess, Robinson has established drainage with no mortality.

Lancet-Clinic, Cincinnati

September 16

90 Gastric Ulcer. W. D. Haines, Cincinnati.
91 Early Diagnosis in Tuberculosis. C. A. Shepard, Los Angeles, Cal.
92 Reminiscences of Early Days of Medical College of Ohio. A. H. Rowan, Santa Ana, Cal.

Medical Record, New York

September 16

93 Tetany and Spasmophile Tendency in Infancy and Childhood. H. Koplik, New York.
94 Conservation of Sight. J. W. Jervey, Greenville, S. C.
95 *New Method of Vaccine Treatment and Prevention of Sepsis. C. H. Duncan, New York.
96 Some Common Errors in Treatment of Diabetes. H. Wakefield, New York.
97 Three Phases of Ectopic Gestation. J. M. Keyes, New York.
98 O'Dwyer Forcible Respiration Apparatus for Children. J. O'Dwyer, New York.

95. **Vaccine Treatment and Prevention of Sepsis.**—The cure employed by Duncan consists in giving the patient crude pus from his own wound by the mouth. The prevention is effected by putting the discharge from a fresh wound in the patient's own mouth. To get some idea of the possibilities of this method of curing and preventing infections, he directs attention to the dog and cat and other animals that lick and cure their wounds. He says this is the oldest method of wound treatment the world has known, for animals have always licked and cured their own wounds. The only place where, as a rule, a cat or dog has bad infections is on the head, which it is impossible for them to lick. If the pus from their head wounds is placed in the mouth they will recover from their head wounds as they do from wounds which they can lick. In licking their wounds, they place the autogenous vaccine in healthy tissues away from the seat of disease, and develop specific antibodies in the serum. This is Nature's method of curing an infection. It is the simplest and the best method of curing infection.

New York Medical Journal

September 16

99 Fifty Cases of Syphilis Treated with Salvarsan, with Special Reference to Clinical Result and Wassermann Reaction. A. L. Wolbarst, New York.
100 Gastric Contents in Gastroptosis. T. R. Brown, Baltimore.
101 Duodenal Ulcer. J. P. C. Griffith, Philadelphia.
102 The Hospital Ship *Solace*. M. F. Gates, U. S. N.
103 Treatment of Acute Ailments in Persons Addicted to Habitual Use of Narcotic Drugs. G. E. Pettey, Memphis, Tenn.
104 Infection: A Contest Between Host and Invader. D. H. Bergey, Philadelphia.
105 Swelling of Liver and Spleen with High Continuous Fever. K. L. Eisner, Brooklyn, N. Y.
106 Iritis Plastica Adherens. A. M. MacWhinnie, Seattle, Wash.
107 Scarlet Fever Complicating Pregnancy, Labor and Puerperium. S. Herzstein, New York.

Kentucky Medical Journal, Bowling Green

July 15

108 Syphilis of Stomach. J. J. Moren, Louisville.
109 Serum Treatment of Cerebrospinal Meningitis. J. A. Flexner, Louisville.
110 Injuries At and About the Ankle. C. G. Forsee, Louisville.
111 Shock. F. T. Fort, Louisville.
112 Successful Intestinal Resection for Strangulation by Cord of Meckel's Diverticulum. L. Kahn, Louisville.
113 Cases and Exhibition of Specimens. I. Abell, Louisville.
114 Tuberculosis of Knee Joint; Exhibition of Specimen. E. S. Allen, Louisville.
115 Par Ovarian Cyst; Exhibition of Specimen. A. M. Vance, Louisville.
116 Gastroduodenostomy in Acute Perforated Gastric Ulcer. H. N. Leavell, Louisville.
117 Series of Obstetrical Cases. E. Speidel, Louisville.
118 Uterine Hydatids Followed by Full-Term Pregnancy and Diagnosis of Chorio-Epithelioma in Puerperium. E. Speidel, Louisville.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

September 2

1 *Mode of Transmission of Leprosy. T. L. Sandes.
2 *Transmission of Leprosy. E. C. Long.
3 Ophthalmo Reaction of Calmette in Early Diagnosis of Phthisis. A. S. Hosford.
4 Nasal Obstruction and Its Consequences in School Children. C. E. Reynolds.
5 *Diagnosis, Prognosis and Treatment of Tuberculous Peritonitis. H. D. Rolleston.
6 *Idem. G. A. Wright.
7 *General Edema Following Gastro-Enteritis in Children. W. E. Hume.
8 Infantilism Associated with Chronic Interstitial Nephritis. L. Parsons.
9 Chronic Pulmonary Affections of Childhood. S. West.
10 *Disturbances Arising from Milk-Feeding in Children After First Year. H. Vogt.
11 *Etiology of Nevi: Nerve Influence in Their Causation. D. C. L. Fitzwilliams.
12 Epidemiology of Poliomyelitis. F. E. Batten.
13 Oxypathy and Uric Acid. W. Stoeltzner.
14 *A Thousand Consecutive Cases of Scoliosis. P. B. Roth.
15 Indications for Employment of Spinal Anesthesia in Abdominal Surgery. H. T. Gray.
16 *Harelip: Modifications and Extensions of Owen's Operation. F. W. Goyder.
17 *Treatment and Prevention of Measles. R. Milne.

1. See THE JOURNAL, Sept. 9, 1911, (12) 930.

2. **Transmission of Leprosy.**—The possibility of the bacillus being carried by vermin occurred to Long. With a view to testing this hypothesis, bed-bugs obtained from huts which had never been inhabited by lepers were caused to bite lepers in the neighborhood of leprous nodules on the face. The bugs were then killed and the alimentary tract and its contents examined. In every bug that bit freely a bacillus was found which in shape, size and staining reactions is similar to the *Bacillus lepræ*. Control bugs from the same hut gave in every instance a negative result. The experiments are still in progress.

5. **Tuberculous Peritonitis.**—Statistics on tuberculous peritonitis in children quoted by Rolleston are the following: Faludi has drawn up tables showing the percentages of cures in parallel series of cases of tuberculous peritonitis in children operated on and not operated on. The authors he quotes are Cassel, Monti, Pic, Schmitz, Schramm and Sutherland, who all give parallel series of cases operated on and not operated on. The divergence in these statistics is considerable. Schramm found 80 per cent. of cures among the operated patients and 64 per cent. among the non-operated; Pic observed recovery in 74 per cent. of the operated patients and in 5 per cent. only of the nonoperated; Wutherland observed recovery in 50 per cent. of the operated patients and in 81 per cent. of the nonoperated. By adding up all the operated patients we get eighty-eight cures, or 70.4 per cent., in 125 cases, as contrasted with fifty-one cures, or 33 per cent., in 156 patients not operated on. The question of operation on ascitic patients may be fairly summed up in the statement that it should be tried after hygienic and medical treatment has been given a fair trial for a month or so without any definite benefit. Simple paracentesis is not often necessary and is seldom practiced. After removal of some of the fluid, injections of various kinds through a cannula have been employed; thus sterilized air, oxygen (Schulze), isotonic salt solution, epinephrin (adrenalin) (Wynter) have been reported to give good results. The injection of camphorated naphthol is a dangerous procedure (Guinard). Rolleston has no experience of any of these methods.

6. **Idem.**—As to the ultimate results of laparotomy in tuberculous peritonitis and its value as a means of treatment, Wright says that probably not much more than half the patients would live to grow up, for of those who recover for a time a large proportion die of tuberculosis in some form within a few years, though the immediate operative mortality is of course very small. There is no hard-and-fast line between ascitic and plastic cases, either as a matter of morbid anatomy or of operative treatment, or of mortality. But operation is simple in cases in which there is much fluid, and may

be impossible in obliterative cases. Tuberculous mesenteric glands may be safely removed, and in some cases certainly should be removed. The rôle of surgery in tuberculous peritonitis is rather to remove secondary troubles, such as obstruction, and to get rid of noxious collections of fluid and local foci of tubercle, rather than to play any great part in the prevention or cure of the disease as a whole.

7. **Edema Following Gastro-Enteritis in Children.**—Hume's attention was first turned to a group of cases of general edema following gastro-enteritis in 1908, when he had four patients under his care in the children's ward of the Royal Victoria Infirmary at the same time. He could not find any evidence of heart or kidney disease in any of these. Since November, 1908, he has seen nine similar cases; three of these have been under his care at the Royal Victoria Infirmary and six under the care of another. Hume has failed to discover that there is any difference between the salt exchange in cases suffering from this variety of edema and that which takes place in perfectly normal children. He does not think that the theory of salt retention wholly explains the condition any more than it does in all cases of edema in Bright's disease. From the fact that the vascular conditions were improved by the injection of epinephrin, that the children improved more rapidly under its administration than without it, and from the fact that in these two cases there was an abnormal degree of fibrosis in the medulla of the suprarenal gland, Hume suggests that attention in future be paid to these glands when opportunities of examining them occur. Finally, he refers to the fact that toxins are developed in the gastro-intestinal tract which cause degeneration and fibrosis of the suprarenal medulla, and that, either as the result of the absence of suprarenal secretion or from the direct action of the toxins on the capillary cells, the latter become more pervious to the outlet of fluid.

10. **Milk Feeding in Children After First Year.**—Vogt cites a number of instances to prove that many children may be injured by a liberal milk diet. The long-retained dogmatic belief of the medical profession that milk is not only the ideal food for infants, but for every age and every ailment, must be abandoned. The requirements which the food of the infant and that of the older child have to meet are quite different. The infant needs for the construction of his rapidly growing organism relatively large quantities of fluid, as well as of solid matter, to be retained as living substance. The older child and the adult, on the contrary, require above all, a supply of material which will furnish the amount of energy necessary to provide for the maintenance of the temperature of the body and the production of muscular work, both of which play only a minor part in the case of the infant. Again, milk lacks certain constituents which must be present in the food of adults and older children. It is extremely poor in iron, it is entirely lacking in purin bases, and last, but not least, it is for most people unappetizing. This last constitutes a very real defect for individuals who have passed their first year.

11. **Etiology of Nevi.**—From figures yielded by his investigation Fitzwilliams believes that females are affected more frequently than males, that nevi are almost always present at birth, and only comparatively few appear at a later date, spider marks and deeply seated nevi being the chief exceptions to this rule; that nevi most usually start on the surface, and less frequently in the deeper structures; that their extension and growth is intimately connected with the nerve supply of the part.

14. **Scoliosis.**—From a study of these 1,000 cases the following points are emphasized by Roth: 1. Scoliosis is a disease of females—843 females, 157 males. 2. Scoliosis is a disease of adolescence—86 per cent. between 6 and 20 years. 3. The frequent occurrence of scoliosis in members of the same family points to hereditary transmission. 4. The bad position assumed in writing, a delicate constitution and too rapid growth are largely responsible for very many cases. 5. Difference in the length of the legs is not a common cause of scoliosis. 6. Pain is a frequent symptom. 7. Flat-foot is a very frequent complication. 8. Attention to dress before any treatment is absolutely essential. 9. Treatment should never be commenced until a record of the osseous deformity has been made. 10. Treatment by "posture and exercise" entirely arrests the increase of bony deformity in all but 5.5 per cent. of observed cases, and in 3.3 per cent. slightly decreases it. In 83 per cent. of cases a permanent practical cure is brought about.

16. **Hare-Lip.**—The modifications described by Goyder consist in: 1. Extensions of the Owen-Mirault flap. These result in a narrowing of the attached part of the lip without diminishing the effective length from corner to corner. 2. A vertical splitting of this flap. 3. The separation of a thick wedge-shaped ribbon of mucous membrane at the mucocutaneous junction on the side opposite to that on which the Owen flap is cut, leaving it attached by the red margin and dovetailing it into the split Owen's flap. This ribbon is entirely removed in Owen's operation. This results in a greatly thickened red margin at the line of suture, which is not opposite to the end of the scar in the lip. It does not attract attention, nor does it become increasingly obvious as time goes on. 4. Special methods of dealing with the nostrils. Incise and separate the ala nasi at its junction with the cheek. Reflect the nasal flap. Suture through alae nasi, the nasal flap (if used), and back through septal side. Put a suture on the face to close the nostril in front. Deal with lip, remembering that its suture line must not be opposite to that in the nose.

17. **Treatment of Measles.**—Milne again calls attention to the so-called "pencil" infection in measles.

Lancet, London

September 2

18 *Spinal Curvatures and Their Treatment by Physical Exercises. R. Timberg.
19 Omnopon: Potent Adjuvant to Local Anesthesia. H. M. W. Gray.
20 *Breast-Feeding; Value of Test-Feed. E. C. Pritchard, H. R. Carter and W. O. Pitt.
21 Pachon's Sphygmo-Oscillometer. J. F. H. Daly.
22 Fulminating Appendicitis; Presence of Liver Dulness; Ligature-Temperature. F. W. Forbes-Ross and Q. Chalmers.
23 *Unusual Case of Intussusception. D. Wood.
24 Dermoid Cyst of Testicle. E. E. Hughes.
25 Unusual Abdominal Conditions in Children. V. H. Starr.
26 Evagination of Meckel's Diverticulum. J. W. Thomson.
27 International Exhibition of Hygiene at Dresden. W. E. Hume.

18. **Spinal Curvatures.**—Timberg describes eighteen exercises which he employs in correction of spinal curvatures.

20. **Breast-Feeding.**—It would appear from the authors' observations that those infants who are brought up in institutions and receive a larger amount of breast milk increase in weight more rapidly than those who attend infant consultations as out-patients; on the other hand, among this latter class of infants it would appear that those who receive larger quantities of milk, instead of putting on more weight per week put on a smaller amount. It may be that on an average the milk which is separated in large amounts is inferior in quality, and in this connection it must be remembered that chemical analysis only affords a very crude estimate of quality. Analysis may show the relative percentage of proteids, fats and sugars, but it cannot, as yet, afford a differential estimation of constituent protein bodies, nor does it indicate whether or not they possess toxic properties. On the other hand, it must be remembered that institutional infants live under superior hygienic conditions than do the poor class of infants who attend our consultations; *ceteris paribus*, the better the hygienic conditions and the more active the vital processes the greater is the demand for food. Want of air, sunlight and all the natural stimuli for active metabolism reduce the vitality of our out-patient infants to such a debased level that it is conceivable that an allowance of food which would be physiologically appropriate for the institutional infants may be relatively excessive for the needs of our class of out-patient infant; and overfeeding, as is now well understood, leads sooner or later to malnutrition and loss of weight.

23. **Intussusception.**—The initial symptoms in Wood's case were vomiting and the passage of blood and mucus per anum. Pain was said not to be a marked feature at the onset. The

vomiting persisted periodically for a week, and blood was passed by the bowel for four or five days. Constipation was absolute throughout the illness, so that for a whole fortnight no fecal matter was voided. During the fortnight she apparently had frequent attacks of intestinal colic, but for the greater part of the time she lay in bed in a listless condition, until toward the end when pain became more frequent and more severe, and she then became restless. She took fluid nourishment well after the vomiting had ceased. The abdomen was noticed to swell progressively, particularly toward the end of the fortnight. Several enemata were given, and these were either retained or returned in part without force. There was never any fecal material in the washings, but occasionally some blood and mucus. The tongue was dry and clean; pulse 120 and fairly good, and temperature 99.6 F. The abdomen was uniformly and considerably distended. Peristalsis was not observed. Rigidity was absent and the abdomen was free from tenderness. There was too much distention to allow of any swelling to be palpated. The rectal examination was negative.

On opening the abdomen through a right paramedian incision it was impossible to prevent the prolapse of many coils of greatly distended bowel. An intussusception was easily delivered through the wound. It had traveled to the left iliac fossa. As is usual, the larger part was easily reduced, but the force employed in attempting the reduction of the last 6 inches or so was too great and the intussuscipiens gave way, the intussusceptum escaping through the rent. It was now seen that the intussusception commenced about 18 inches above the ileocolic valve. About 12 inches of the small gut, including the intussusception, were resected, and an end-to-end anastomosis rapidly made. The child's condition was critical, and as the suturing had to be rapidly carried out in edematous bowel the junction was almost certainly imperfect. For this reason, and also on account of the great intestinal distention, the bowel was drained on the proximal side of the junction by a Paul's tube. The abdominal wall was closed save in the lower part where the drainage was established. The patient recovered.

Australian Medical Journal, Melbourne

July 29

28 Technic of Appendix Removal. R. H. Russell.
29 Chronic Kidney Disease. S. V. Sewell.
30 Ocular Signs of Renal Disease. F. A. Newman.
31 Two Cases of Chronic Mediastino-Pericarditis. T. E. V. Hurley.

Indian Medical Gazette, Calcutta

August

32 A Year's Medico-Legal Work in Calcutta Morgue, 1910. O. St. J. Moses.
33 Possibility of Two Distinct Varieties of Relapsing Fever Spirochaetal Infection Existing in India. H. Stott.
34 Personal Factor in Sanitation. C. A. Gill.
35 Unusual Cases in Hospital Practice. R. Knowles.
36 Case of Mesenteric Thrombosis. W. L. Harnett.
37 Simple and Cheap Litholapaxy Evacuator. A. J. V. Betts.
38 New Pattern Urinal (for Use in Forts). E. C. Taylor.

Obstétrique, Paris

July, IV N. S., No. 7, pp. 663-728

39 *Puerperal Psychoses. L. Picqué.

August, No. 8, pp. 729-776

40 Obstetrical Anatomy of the Pelvis with Congenital Dislocation of the Hip Joint. (Recherches et conclusions nouvelles sur l'anatomie obstétricale du bassin à luxation coxo-fémorale congénitale double.) J. Delmas.

39. **Puerperal Psychoses.**—Picqué protests most vigorously against sending women with puerperal psychoses to an asylum, declaring that the mental trouble in these cases is merely a delirium accompanying puerperal septicemia. The infectious process may be mild or may cause no symptoms except this delirium, but the women are febrile deliriants and the delirium rises and falls with the rest of the infectious syndrome and does not survive it. He thinks that the importance of latent infection of uterine origin as a causal factor in mental disease does not receive the attention that it merits. His remarks apply only to the psychoses of the puerperium, not of the pregnancy. They may develop even without fever and the infectious process may be located elsewhere than in the uterus; surgical treatment of an infectious arthritis in a woman soon after delivery speedily cured the psychosis observed in one of his cases. An inherited taint is important in that women with it only need an opportunity for the delirium to develop, but an infectious process acting on the predisposition, especially when the infection is of a chronic character, may render the delirium incurable. Otherwise the prognosis depends on the curability of the underlying infectious process. The tardy melancholia of women after childbearing at which there has been no fever, is the result of some attenuated and latent infection, but if the infectious process has run along for a long time and become chronic there is danger that the melancholia may be chronic likewise. The importance of curing the focus at once is demonstrated by these views, which are based on wide clinical experience. He comments with dismay on the number of cases in which women with puerperal psychoses are sent to the asylum in his charge; it is not equipped for the local treatment necessary in these cases. On the other hand, the apyretics, with permanent mental disturbances developing sooner or later after the childbirth, belong in the asylums, as they require psychiatric treatment.

Presse Médicale, Paris

August 12, XIX, No. 64, pp. 657-664

41 *The Arterial Tension in Acute Pulmonary Edema. L. A. Amblard.
42 *Subacute Hemorrhagic Pancreatitis. R. Leriche and L. Arnaud.

August 16, No. 65, pp. 665-672

43 Vaccine Treatment in Typhoid Fever. (Résultats thérapeutiques obtenus par l'emploi du vaccin typhique irradié.) M. Renaud.

August 19, No. 66, pp. 673-680

44 Parasyphilitic Meningitis. A. Sézary.
45 *Albumin Reaction in Pleurisy and Congestion of the Lung. V. Raymond.

August 23, No. 67, pp. 681-688

46 Agglutination Test in Malta Fever. (Valeur de la séroréaction de Wright dans le diagnostic de la fièvre ondulante ou melitococcie.) L. Nègre and M. Raynaud.
47 Sodium Sulphate in Therapeutics. (Comment il faut prescrire le sulfate de soude.) A. Martinet.

August 26, No. 68, pp. 689-696

48 Fracture from Tearing Out of the Tuberosity of the Calcaneus. E. Juvara.
49 Polyglandular Syndrome. (Etude clinique et anatomique d'un type à prédominance thyroïdienne et pancréatique.) M. Faure-Beaulieu, M. Villaret and M. Sourdel.

41. **Blood-Pressure in Acute Edema of the Lungs.**—Amblard states that recent experimental research by others has confirmed his clinical findings in regard to the features of the high blood-pressure preceding acute pulmonary edema from functional insufficiency of the left ventricle. The discovery of a high maximal and minimal blood-pressure should warn of possibly impending pulmonary edema and should be the signal for reducing the minimal arterial tension, the peripheral resistance, and for this, he says, there is only one means; that is, regulation of the diet. All causes for exogenous intoxication should be avoided, as also any unusual amount of salt; the diet should be chiefly milk and vegetables, with as little salt as possible, supplemented by a carefully supervised course of diuretic mineral waters. The heart is then equal to its task and no tonics are required. After an attack, the heart having shown that it has become insufficient, the above measures should be supplemented by tonics to strengthen the heart, especially digitalis. During an attack of acute pulmonary edema bloodletting certainly gives great relief. Morphin given in the hope of combating the dyspnea generally proves disastrous, as it adds the toxic action of the drug to the other burdens under which the kidney is already laboring.

42. **Subacute Hemorrhagic Pancreatitis.**—Leriche and Arnaud report a third case of hemorrhagic pancreatitis in which they have operated. The patient was a man of 48 who had been suffering for two months with recurring pains in the left epigastrium, growing constantly more intense, and radiating backward. A tumor could be palpated under the false ribs while the patient was very anemic and weak. Cancer in the colon was assumed, but the laparotomy revealed merely traces of a recent hemorrhagic pancreatitis with an encysted hematocele which had recently suppurated. The hemorrhagic tendency was revived by the operation, and the patient succumbed

the next day to the constant oozing of blood from the wound. The case teaches that when a hemorrhagic pancreatitis has reached the stage in question the operation should be deferred until healing is a little more advanced unless intervention is urgent. The cachexia and the tumor were the chief symptoms in this case, and they diverted attention from the differentially even more important symptom of the local pains.

45. **Albumin Reaction in the Sputum.**—Raymond's experience confirms the appearance of albumin in the sputum whenever there is any lesion of the parenchyma of the lung, an alveolitis. It is a constant accompaniment of serofibrinous pleurisy and acute congestions of lungs and pleura. Cautious interpretation of positive findings throws light on the lesions involved, as he shows by a dozen clinical cases. In one of the cases the positive albumin reaction, in connection with persisting temperature and the history of the case, seemed to indicate that an old and healed tuberculous lung process had flared up anew under the influence of an attack of measles. In other cases the acute character of the febrile lung affection giving the albumin reaction, the connection with a simple bronchitis, the albuminuria and absence of tubercle bacilli in the sputum—all indicated that the trouble was a comparatively transient pulmonary affection, possibly the work of the pneumococcus. The persistence of the albumin reaction for some time after recovery reveals the lesion of the lung parenchyma, which is the true substratum of the affection; the vascular congestion is not the main feature of the cases, but rather the active exudation into the alveoli, as well as into and under the pleura. The alveolitis is responsible for the main physical signs observed. In one of the cases reported the negative albumin reaction excluded tuberculosis, and showed that the trouble was a simple chronic bronchitis and emphysema in an old case of healed pulmonary tuberculosis.

Revue de Chirurgie, Paris

August, XXXI, No. 8, pp. 215-390

50 *Tuberculous Hip-Joint Disease. (Etude critique sur la coxalgie et mise au point de quelques trauvaux sur le traitement.) E. Vincent.
51 *Osteomyelitis of the Sacrum. H. Gaudier and P. Bertein.
52 Primary Glandular Epithelioma of the Vagina. (Sur une forme particulière d'épithélioma primitif du vagin.) Argaud and Piollet.
53 *Technic for Perineal Prostatectomy. (Nouveau procédé de prostatectomie périnéale.) H. Martini.
54 *Fracture of the Spine in the Neck Without Cord Symptoms. (Des fractures du rachis cervical sans symptomes médullaires.) J. Boeckel and A. Boeckel. Commenced in No. 6.

50. **Tuberculous Hip-Joint Disease.**—Vincent adds a number of points and details to complete Coudray's article on this subject published in the *Revue* last April. Vincent advocates resection for a certain group of cases in young children, but not for adults or older children. He applies resection only after failure of all conservative measures, but insists that when it is done in time it will save many a child who would inevitably succumb if left to Nature's efforts alone or even aided by the whole train of modifying injections, immobilization, extension, traction, fresh air, sea bathing and all other hygienic measures.

51. **Osteomyelitis of the Sacrum.**—Gaudier and Bertein have found twenty-seven cases of osteomyelitis of the sacrum in the literature, including nine reported by French authors. The prognosis is graver than for osteomyelitis elsewhere in the spine, the signs of general infection are more pronounced. They explain this by the anatomic arrangement of the parts owing to which the infectious focus is walled in deep and may not monifest itself for some time. The germs thus shut up in a closed cavity have their virulence exalted and induce general infection with serious phenomena, sometimes even before the focus has been brought to the patient's attention. Operative treatment is indicated at the earliest possible moment to ward off severe general infection or attenuate it. They give the details of the total twenty-seven cases; operative measures, even the most extensive, failed to save the patient except in seven instances, including Hunt's and Young's cases.

53. **Instruments for Perineal Prostatectomy.**—Martini uses a kind of cat's paw instrument to draw up the whole prostate, the three claws folding together as the instrument is introduced. Guided and sheltered by this instrument, another is introduced with a scoop at the tip made of three triangular sharp blades. This resects the prostate tissue, while it is impossible, he says, for it to cut too far or injure the bladder wall. The article is illustrated.

54. **Fracture of the Spine in the Neck Without Spinal Cord Symptoms.**—Bœckel declares that the prognosis of fracture of the cervical spine has been shown up in an entirely new light by the Roentgen rays which have revealed that even extensive fractures may exist and heal without any spinal cord disturbances, and that fractures of the cervical spine, atlas and axis are much more common than hitherto supposed, and explain many hitherto puzzling conditions, the latent fracture having been taken for a sprain, contusion, rheumatism or neurosis or the patient accused of simulation. An early diagnosis is of the greatest importance to ward off mischief later; when trouble does occur it is always extremely serious, if not fatal. Fifty-seven cases are described from the literature or previously unpublished records, and the various differentiating symptoms and best technics for treatment in the different cases are reviewed. The mortality was 34.3 per cent. in the total number and only 22.2 per cent. when the fracture involved the third to the seventh cervical vertebræ. Fracture of the vertebræ above these is much more serious, the mortality having been 45.1 per cent. in his series. At the same time all the seventeen patients have recovered of the former class and the fourteen patients in the latter class, since roentography has been introduced. These figures show that the prognosis of fracture of the spine without injury of the cord has been transformed since it has been possible to recognize it early and apply proper treatment to insure consolidation in a good position, restoring the spine to its normal length and preventing the vertebra above from pressing on the fractured vertebra, while at the same time preventing tardy compression of the spinal cord later from overexuberant callus or traumatic spondylitis. The physician should superintend the transportation of the patient so that the fractured bones may not become displaced. Chipault advises laying a large plank beside the patient after the accident, covering it with a folded sheet, with a crosspiece arranged at the level of the neck; four persons are to lift the patient on the plank while the physician lifts the head and neck with both hands. He has known of persons without spinal cord symptoms after an accident of the kind to become paralyzed or succumb as they were lifted to carry them away. A radiograph should be taken before the patient is removed from the plank to his bed with similar precautions. The fracture should then be gradually reduced and immobilized or extension may be necessary, eventually kept up for a year or longer. Boeckel has compiled nearly a hundred cases of fracture of the cervical spine which healed promptly under these measures. Tardy accidents in other cases have sometimes required rupture of the callus, laminectomy or the figure-eight wire ligature. Defective healing of the fracture causing trouble in some cases was cured by renewed reduction and extension.

Semaine Médicale, Paris

August 23, XXXI, No. 34, pp. 397-408

55 *Vertigo of Intestinal Origin. (Le vertige intestinal.) M. Loeper.

August 30, No. 35, pp. 409-420

56 *The Unappreciated Rôle of Acute Gastritis in Infectious Diseases. L. Cheinisse.

55. **Vertigo of Intestinal Origin.**—Loeper demonstrates how the apparatus of equilibration is liable to be affected by toxins generated in the intestines, by irritation of the nervous elements directly or by vasomotor fluctuations in the tension in the semicircular canals. These variations in tension may be independent of the general circulation, and to determine this the general arterial tension should be investigated, as this, in connection with hypertoxicity of the urine and other phenomena of a toxic order, distinguishes toxic from reflex vertigo. Treatment should be addressed to the bowels, supplemented by amyl nitrite in case the arterial tension is very high or spartein, strychnin, ether, bromids or valerian in case it is low. All irritating foods should be avoided, as also large amounts of fluids which suddenly increase the mass of

the blood. It is important not to depress the patients by a too exclusive or debilitating diet. Many such patients are already excessively nervous and all become so if the vertigo persists, which should be borne in mind in treatment with means to reduce the excitability of the neuromuscular system.

56. **The Unappreciated Rôle of Acute Gastritis in Infectious Diseases.**—Cheinisse does not accept Jerusalem's view that the relics of interstitial gastritis with proliferation of connective tissue which he has discovered at necropsies as such a constant phenomenon in acute infectious diseases, are merely a functional disturbance from the general infection. Cheinisse has encountered several cases of erysipelas and mumps in which the gastric symptoms dominated the clinical picture and could be explained only by assuming a localization of the specific infectious process, the erysipelas or the mumps, in the stomach. The prognosis differs naturally if the acute stomach trouble is a localization of erysipelas or mumps, especially when it is borne in mind that phlegmonous gastritis is not such a rare occurrence as formerly supposed. Cheinisse had a case of the kind in 1909, the phlegmonous gastritis developing in the course of an apparently mild erysipelas. The considerations presented suggest the importance of leaving the stomach in repose during the "gastric phase" of any acute infectious disease.

Beiträge zur Klinik der Tuberkulose, Würzburg

XX, No. 2, pp. 215-340. Last indexed August 5, p. 516

57 Albumose-Free Tuberculin. (Erfahrungen mit eiwissfreiem Tuberkulin.) W. Freymuth.
58 *Reinfection with Tuberculosis. (Ueber Tuberkulose-Reinfektion mit bes. Berücksichtigung der Heilstätten.) W. Freymuth.
59 The Type of Respiration in Women. (Kostaler und abdominaler Atemtypus beim Weibe.) G. Liebe.
60 Endotin in the Treatment of Tuberculosis. A. Camphausen.
61 *Induced Abortion and Tubal Sterilization on Account of Pulmonary Tuberculosis. A. Schottelius.
62 *Experimental Tuberculin Tests. (Die subkutane Tuberkulininjektion als Mittel zur Diagnose des Tuberkelbazillus im Tierversuch.) M. Jacoby and N. Meyer.
63 Elbon in Treatment of Febrile Tuberculosis. (Ueber die Behandlung des tuberkulösen Fiebers durch kontinuierliche Benzoylierung mit Cinnamoyl-para-oxyphenylharnstoff.) W. Minnich.
64 Blood-Pressure After Injection of Tuberculin. (Blutdruckmessungen nach Tuberkulininjektionen.) R. Reznicek.

58. **Reinfection with Tuberculosis.**—Freymuth is chief of the great Belzig sanatorium and he has been reviewing the files of the institution to learn the chances for reinfection at such sanatoriums. He examined the records of 1,400 adults and 328 children, inmates of the sanatorium in 1908 to 1910. He found only thirty cases among the adults in which tubercle bacilli were found in the sputum after they had been in the sanatorium some time, while none were discoverable when they entered, that is, only in 2 per cent., while only two of the children, that is, 1 per cent., came into this category. The interval was only from three to eight days which excludes the possibility of reinfection. The findings related confirm, he thinks, that there is not the slightest necessity for separating the patients with closed from those with open tuberculous lesions. The healthy are exposed to droplet infection, but he knows of no case on record in which a healthy person became infected with tuberculosis in a sanatorium. This may be due to the fact that the supposed healthy are already infected with tuberculosis and consequently immune, or to the fact that the residence in a sanatorium for lung disease induces immunization in time. The question still open to discussion is whether the life in common of patients with open and closed pulmonary tuberculosis may not lead to transmission of mixed infection, and hence that patients with demonstrated mixed infection should be isolated.

61. **Interruption of Pregnancy in Tuberculous Women.**—Schottelius calls attention to the strange fact that older observers used to ascribe a beneficial influence to a pregnancy in the course of pulmonary tuberculosis, while in recent years the tendency has been to attribute a very harmful influence to it. He regards abortion as indicated whenever pulmonary tuberculosis is diagnosed beyond question as his experience shows that in at least 75 per cent. of all the cases the lung affection rapidly progresses during the pregnancy and puerperium. The written consent of the patient and her husband and of a consulting internist are necessary—the responsibility lies with the family physician or the consulted lung specialist. Once decided, the pregnancy should be terminated as soon as possible and be supplemented by tubal sterilization if the woman has already borne more than one child. The more pressing indication for hysterectomy in these cases is excessive uterine hemorrhage. The disturbances from castration should turn the scale in favor of leaving the ovaries. The sterilization induced by exposure to the Roentgen rays destroys the ovaries and thus is equivalent to panhysterectomy, but it has the advantage over this of being a bloodless procedure, not requiring general anesthesia.

62. **Subcutaneous Tuberculin Test After Diagnostic Inoculation of Animals.**—Jacoby and Meyer advocate a subcutaneous injection of 0.5 c.c. of tuberculin two weeks after the animal has been inoculated with the suspected sputum, as a means to simplify and hasten the findings. They report twenty-seven series of experiments with a total of 221 guinea-pigs including forty-three control animals. Fully 88 per cent. of the animals given the test, in from eleven to fourteen days presented a marked reaction; the results were conflicting or negative when the sputum had been previously treated with alkaline solution of sodium hypochlorite (antiformin). The animals giving a positive reaction either died or showed a marked drop in temperature of at least 5.4 F. The anatomic findings were positive in every case giving a specific reaction. They advise using three guinea-pigs, not over 250 gm. in weight each, injecting on the eleventh, the sixteenth and twenty-first days, making a subcutaneous injection of 0.5 c.c. tuberculin. It is thus possible to clinch the diagnosis within two weeks.

Berliner klinische Wochenschrift

August 28, XLVIII, No. 35, pp. 1585-1624

65 Laryngo-Rhinology as an Independent Medical Science. G. Killian.
66 Action of Salvarsan in Syphilis Affecting the Upper Air Passages O. Chiari.
67 *Treatment of Loss of Voice. (Dysphonia spastica.) O. Seifert.
68 Diagnosis and Treatment of Disease in Nasal Sinuses with Eye and Orbit Symptoms. A. Onodi.
69 Mesothorium in Therapeutics. G. Baumm.
70 *Stretching of the Pylorus in Benign Stenosis. M. Einhorn.
71 Results of Operation for Myopia. H. Feilchenfeld.
72 *Differential Atmospheric Pressure in Lungs by Impeding Expiration. (Einfaches Ueberdruckverfahren.) E. Aron.

67. **Treatment of Aphonia.**—Seifert discusses the five groups in which spastic dysphonia may be classified, the hysteric, the reflex, the professional neuroses, those accompanying cerebrospinal affections, and the group in which no causal factor can be discovered. He has obtained exceptionally fine results in this latter class by a method which he describes in detail, aiming to exclude causal spasms in the muscles of the neck, abdomen and diaphragm, while training the patient to speak, on the same principles as in the treatment of stuttering. He accomplished this by having the patient lie across a sofa, the back of his neck supported on the thigh of a third person sitting near the sofa while the patient's head drooped a little, the feet supported on a stool. In this position the patient was trained to breathe deep and regularly and relax all the muscles. After two or three days he had learned to do this and then he was told to whisper "ah" and "ay" and then gradually increase the sound while the physician compressed the abdominal walls after each deep inspiration. The patient was taught to speak with as deep a voice as possible. After two weeks of these exercises he was able to do them sitting up, pressing on the epigastrium to exclude the contractions of the abdominal musculature and diaphragm. By the end of the month the patient was quite cured. He was a man of 36 and the aphonia had developed over two years before and was complete, not obtaining any relief until this course of exercises. A letter from him over a year later confirms the permanency of the cure, and his recovery is evidenced in an official communication from the mayor of his home town, a city with 16,000 inhabitants, expressing the universal gratitude for his cure.

70. **Stretching the Pylorus with Benign Stenosis.**—Einhorn's work was described in THE JOURNAL, May 27, 1911, p. 1607.

72. **Simplified Differential Pressure Procedure.**—Aron reports experimental research which demonstrates that a device impeding expiration keeps the lungs permanently inflated, even during expiration, so that the thorax can be opened without its collapsing. It is possible that this principle may be applied in operations on the human chest. His technic requires a preliminary tracheotomy.

Correspondenz-Blatt für Schweizer Aerzte, Basel

July 26, XLI, No. 21, pp. 737-768

73 *Action of Arsenic and Habituation. (Ueber Arsenikwirkung und -Angewöhung.) M. Cloetta.
74 *Glycerin Dressings for Infected Wounds and Lesions. (Behandlung von infizierten Wunden, Phlegmonen, Panaritien und Adenitiden mit Glyzerinverbänden.) F. Rusca.

August 1, No. 22, pp. 769-800

75 Lumbago from Standpoint of Industrial Insurance. (Einige Betrachtungen über Lumbago vom Standpunkt der Unfallversicherung aus.) E. Patry.
76 Sterilisation of Sewage. (Ueber Abwässerreinigung.) W. Silberschmidt. Commenced in No. 21.

August 10, No. 23, pp. 801-832

77 Diagnosis of Heart Disease. (Beiträge zur modernen Herzdiagnostik.) D. Gerhardt.
78 *Subcutaneous Drainage of Ascites. E. Tavel.

August 20, No. 24, pp. 833-864

79 Medical Professional Work from Forensic Standpoint. (Aerztliche Berufshandlungen und die Strafrechtsreform.) A. Kaiser.
80 Opening of Cheesy Foci in Tuberculous Lung. (Durchbruch von Käseherden in der tuberkulösen Lunge.) Erni.

73. **Arsenic the Digitalis of the Metabolism.**—Cloetta thus calls arsenic in his article reporting experimental research on its action. He found that animals fed with arsenic developed much better in every respect than the controls from the same litter. That this better physical development includes the vital tissues and is not merely increased accumulation of fat, is shown by the fact that the total tissues of the animals ground into a homogeneous mass, from which water and fat were extracted, showed a larger proportion of nitrogen in the arsenic animals than in the controls. He accepts this as evidence that the arsenic actually promotes the metabolism as digitalis promotes the action of the heart—laboratory research thus lumbering along to explain the facts observed by empiric observation generations ago. He fed dogs with arsenic over long periods, one of the dogs, a fox-terrier, he thinks, must be accorded the record for eating arsenic, as he took 0.5 gm. of arsenic daily for two months and then 2.6 gm. a day without harm, the arsenic feeding being kept up for over two years. Cloetta's further research, however, swept away the idea that the animal had become habituated to the drug, as it was proved that he merely had ceased to absorb it. The lining of the alimentary canal had evidently become modified in such a way that it ceased to absorb the arsenic. This is probably the explanation for the resistance to arsenic acquired by trypanosomes in time and suggests the importance of supplementing salvarsan or other preparations of arsenic with mercury to which the spirochetes do not acquire resistance so soon. For the same reason he hails with approval the efforts to use preparations of antimony against the trypanosomes. There does not seem to be any habituation to antimony, and the proportion absorbed does not progressively decline as is the case with arsenic. He adds that Rowntree and Abel's recent work in this line in this country confirms the results obtained in his researches on dogs in regard to the trypanosomes becoming proof against arsenic and antimony.

74. **Glycerin Dressings for Infected Wounds.**—Rusca is seeking to revive glycerin as a dressing for wounds. Its water-attracting power serves to reduce the congestion in the region while it keeps the wound clean by taking up the secretions and softening the necrotic tissue and crusts so that they can be readily removed, thus depriving the germs present of their favorite nests. Glycerin has also a slight sterilizing action which might be enhanced by addition of some disinfectant. There cannot be the slightest danger from the use of glycerin, he continues, as even taken internally in large doses there does not seem to be any toxic action. He saturates a compress with official glycerin and applies it to the lesion, covering with an air-tight cover, and changes the dressings twice a day. He has obtained excellent results with this technic in 100 cases of various local infectious processes, the lesions soon clearing up and healthy granulation following, except the tuberculous lesions; these do not seem to be influenced. The glycerin dressings are free from the coagulating action on albumin which is one of the disadvantages of alcohol dressings.

78. **Subcutaneous Drainage of Ascites.**—Tavel uses a glass spool with broad ends, the hole through the center 1 cm. in diameter. One end of the spool is worked through into the peritoneal cavity and an ample hole to hold the other end of the spool is made for it in the subcutaneous tissue. Not even local anesthesia is required for the insignificant operation of introducing the spool; the only point is to manage so that omentum will not get into the lumen and obstruct it. He has used the spool in five cases which he reports in detail, the outcome being excellent in all, the ascites draining effectually and harmlessly into the subcutaneous tissue.

Deutsche medizinische Wochenschrift, Berlin

August 24, XXXVII, No. 34, pp. 1545-1584

81 Experimental Tuberculosis of the Eye. (Zur experimentellen Tuberkulose des Auges.) F. Krusius.
82 Transmission of Syphilis to Rabbits by Spirochetes Cultivated from Man. (Uebertragung der Syphilis auf Kaninchen mittels reingezüchteter Spirochäten vom Menschen.) H. F. W. Hoffmann.
83 *Chronic Salvarsan Treatment in Syphilis. E. Kromayer.
84 Salvarsan in Treatment of Chorea. B. Hahn.
85 Salvarsan in Bilharziasis. N. Z. Joannides.
86 *Pathogenesis of Pick's Pericardial Pseudocirrhosis. B. Fogarasi.
87 Oriental Sore. (Die endemische Beulenkrankheit oder Orientbeule.) A. Reinhardt.
88 *Lead Poisoning and the Wassermann Reaction. (Bleivergiftung und Wassermannsche Reaktion.) F. Perussia.
89 *Surgery of the Blood-Vessels. (Arterien-Venenverbindung.) E. Heymann.

83. **Chronic Salvarsan Treatment of Syphilis.**—Kromayer asserts that the experience acquired with other drugs in the treatment of syphilis teaches that it is impossible to eradicate the disease at one stroke, no matter how large the dose of mercury or other drug. Success is possible only with long continued small doses, and the same is evidently true of salvarsan. He has been giving it on this priniciple for nearly a year, making an intravenous injection of about 0.2 gm. of salvarsan three times a week, up to a total of 3.6 gm. Of 365 patients thus treated he has recently had 136 reexamined and the findings confirm his statements that this is by far the best method of treating syphilis at our disposal. There was no neurorecurrence in any instance and no recurrence of symptoms in any case in which the total dosage had amounted to over 1.6 gm. of salvarsan. He is convinced that inadequate dosage of salvarsan as well as of mercury, exposes the patient to the danger of recurrences in a serious form more than if he had not been treated at all. It is his practice to give some mercury with the salvarsan, and the fact that the neurorecurrences subside under calomel he accepts as evidence that they cannot be due to intoxication from the salvarsan but are actually manifestations of the syphilis.

86. **Pericardiac Pseudocirrhosis.**—Fogarasi discusses the mechanism and development of polyserositis, especially that form which Pick has described as pericardiac pseudocirrhosis. It may develop from polyserositis alone or from stasis resulting from mischief in the pericardium, the syndrome being practically identical, although the mechanism may thus be so widely different. To sustain these views he reports a case in which a boy of 17 was hit in the heart region; after five months pericarditis developed, keeping him in bed for six weeks. About three months later a tendency to edema of the ankles and anasarca became evident, the latter due to stasis of both mechanical and tricuspid origin, the liver becoming enlarged at the same time.

88. **Wassermann Reaction Not Pathognomonic of Lead Poisoning.**—Perussia states that he found the reaction constantly negative in thirty-five non-syphilitic patients with various manifestations of lead poisoning and three others who had been infected with syphilis in previous years but had received vigorous treatment. His findings conflict with those of Dreyer, who obtained a positive reaction in sixteen similar cases among sixty patients examined, and Schnitter's, who found the reaction positive in four of sixteen cases.

89. **Surgery of the Vessels.**—Heymann reports the complete cure of angiospastic gangrene in a man of 47, a teacher, by diverting the arterial blood into one of the veins in the forearm. He gives an illustrated description of the technic; the benefit realized at once has persisted unmodified during the ten months to date of writing.

Medizinische Klinik, Berlin

August 6, VII, No. 32, pp. 1223-1260

90 *Pelvic Tuberculosis in Women. (Beitrag zur Klinik der Genital und Peritonealtuberkulose des Weibes.) M. Neu.
91 *Gastric Tetany. E. Bircher.
92 *Two Simultaneous Forms of Abdominal Disease. (Doppelerkrankungen mit konkurrierenden Symptomen.) T. Walzberg.
93 Tuberculin Plus Climatic Treatment of Tuberculosis. A. Wolff-Eisner.
94 Causal Connection Between Syphilis and Idiocy. E. Kröber.
95 Apparatus for Combined Anesthetics, Differential Pressure and Artificial Respiration. (Drägers Kombinationsapparat für Mischnarkose, Ueberdruckverfahren und künstliche Atmung.) O. Roth.
96 Physical Features of the Atmosphere from Medical Standpoint. A. Gockel.
97 The American Medical Student. (Der amerikanische Mediziner und sein Milieu.) Spier.

August 13, No. 33, pp. 1261-1298

98 Treatment of Acute Gastro-Enteritis in Infants. (Behandlung der akuten Magendarmerkrankungen im Säuglingsalter.) F. Göppert.
99 The Differential Stethoscope and the Heart Sounds. (Messungen der Intensität des Herzschalls vermittels des Bockschen Differential-Stethoskops.) Goldschmidt.
100 Titanium in Therapeutics. (Ueber die medizinische Verwendbarkeit der Titanverbindungen.) J. Pick.
101 Mineral Springs and Radio-Active Properties. (Bedeutung der hochradioaktiven Quellen im Lichte der modernen Emanationstherapie.) S. Lachmann.
102 Diagnosis of Scabies. A. H. Rosenberg.
103 Jellying of Albuminous Urine. (Gelatinierung eines eiweisshaltigen Urins durch Zusatz von Essigsäure.) G. Moruzzi.

August 20, No. 34, pp. 1299-1336

104 Operative Tendency in Obstetrics. (Die Berechtigung der modern-chirurgischen Bestrebungen in der Geburtshilfe.) H. Küster.
105 Commercial Chopped Meats from the Hygienic Standpoint. (Hackfleisch, Hacksalze und Hackfleischerkrankungen.) H. Trautmann. Concluded in No. 35.
106 *Cerebral Influenza. (Hirninfluenza.) K. Stepp.
107 Acute Painful Symmetric Lipomatosis. J. Klinkowstein.
108 Treatment of Diabetes Mellitus. A. Lenné.
109 Primary Cancer of the Bronchi. (Chronische Bronchialerkrankungen mit Ausschluss der Tuberkulose.) A. Posselt. Commenced in No. 32.
110 *End-Results of Operative Treatment of Non-Pyloric Gastric Ulcer. (Ergebnisse der chirurgischen Behandlung des nichtpylorischen Ulcus ventriculi.) W. Zweig.
111 Hemolysins in Cerebrospinal Fluid in Acute Meningitis and Progressive Paralysis. E. Weil and V. Kafka.

90. **Pelvic Tuberculosis in Women.**—Neu has been able to reexamine seventy-seven women who had been under treatment for genital or peritoneal tuberculosis at the Heidelberg clinic between 1902 and November, 1910. Of the fifty-five given operative treatment, 75 per cent. were living and 52 per cent. of the twenty-one treated by conservative measures. On account of the uncertainty of the diagnosis and prognosis of tuberculous processes in the peritoneum and genital organs, operative treatment is indicated, he thinks, if there are no advanced tuberculous lesions elsewhere, particularly in the lungs. The operation should be as radical as possible, including in case the genital organs are involved removal of the uterus, both tubes and the ovary affected. In the inoperable cases, the conservative measures then indicated should include Roentgen therapy. A course of sanatorium treatment before or after operative treatment is extremely desirable. Neu protests against exploratory puncture, advocating rather an exploratory incision. He warns further against the dangers of diagnostic tuberculin tests. The reaction is liable to be far from harmless; he has witnessed cases in which the diagnostic injection of tuberculin seemed to start the process to a progressive course or it had a most unfavorable influence on a tuberculous process elsewhere, especially in the lungs, and depressed very much the general health. He inquires whether others have had similar experiences. He regards exploratory curetting likewise as liable to prove dangerous.

91. **Gastric Tetany.**—Bircher writes from Switzerland, where tetany is comparatively rare, to report several cases of gastric tetany, some with a fatal outcome, and a case of tetany in a soldier after overexertion. The features in the latter case suggested a combination of idiopathic with gastric tetany. In another case the tetany developed in the course of recurring gastro-intestinal disturbances in a man of 30, a hard drinker. After five days of ileus, tonic spasms developed in the neck and muscles of the jaw and cramps in the legs. Necropsy showed the stomach enormously dilated and the jejunum kinked 1 cm. below the pylorus. In three other cases the spasms came on two or six days after appendectomy in children between 5 and 17 and proved fatal in a few hours. A toxic action from the peritonitic effusion seems to have been the probable cause of the tetany in these cases, and he thinks that this may occur more often than supposed and that surgeons should bear its possibility in mind. In another case a woman of 39 of a neuropathic family had anterior gastro-enterostomy done for stenosis of the pylorus from ulcer. The stomach was found much dilated, but there was no tendency to tetany. The pylorus was so closely adherent to the liver that it could not be detached. At the ninth day of convalescence tetany developed and soon proved fatal. The gastro-enterostomy was found doing its work and Bircher is inclined to attribute the tetany in this case to lack of water in a predisposed subject—the rectal injection of water had not sufficed to quench the thirst. He knows of no similar case on record in which tetany was brought on by an operation on the stomach. In another case a similar operation cured tetany in a farm hand, the extreme irritability of the musculature in this case surpassing anything of the kind he has ever heard of. The man had had a goiter removed twenty years before.

92. **Two Simultaneous Forms of Abdominal Disease.**—Walzberg reports three puzzling cases in which an intestinal ulcer and appendicitis were associated or umbilical hernia and ileus, the latter explained by a cancer in the transverse colon, or there was an umbilical hernia plus hernia in the median line and thrombosis of the mesenteric vessels. In the last mentioned case the thrombosis was in such an incipient stage that it was not recognized and the abdomen was sutured after the herniotomy. Walzberg gives the details of the cases on the principle that one learns most from one's mistakes. The symptoms had been ascribed to the partial incarceration of the bowel in the hernia openings and to a cord-like adhesion connecting the omentum with one hernial sac. The root of the mesentery was seen studded with fan-like extravasations and some of the vessels were gorged with blood. Nothing macroscopic could be detected on the connected loops of intestines and the abdomen was sutured. The third day symptoms developed, showing that there must have been incipient embolism at the time of the operation.

106. **Influenza of the Brain.**—Stepp says that not enough attention has been paid to the cerebral disturbances liable to be directly induced by influenza localizing in the brain. In his three cases the patients were free from cardiovascular trouble and all were in the forties. The disturbances developed gradually at first, paralysis of the cheek, then hemiplegia and after a few days the other side was affected. The trouble is probably a disturbance in the smallest capillaries of the brain, inducing diapedesis. Complete recovery may follow or the extravasations may become confluent as after ordinary apoplexy. This recalls the fact that in most cases influenza begins with intense headache. It also suggests that persons with arteriosclerosis are exposed to peculiar danger during epidemics of influenza, and that under the influence of the infection ordinary apoplexy may occur with unusual frequency.

110. **End-Results of Operative Treatment of Non-Pyloric Gastric Ulcer.**—Zweig has records of twelve cases in his practice in which a gastro-enterostomy was done for a gastric ulcer, not located near the pylorus. The outcome was good in only five of the twelve cases; four deaths and three severe recurrences show that gastro-enterostomy under these conditions is a dangerous operation and benefits only in the rarest cases. These experiences, he adds, stand in marked contrast to the rosy reports from the surgical clinics. In conclusion he reports a case which shows that the success of operative treatment is not always attributable to the operation. A man with recurring gastric hemorrhage was so debilitated that jejunostomy was contemplated but the patient refused

an operation and was freed from all disturbances by a six-months' course of treatment in a sanatorium. He has had no trouble since, showing that even in apparently desperate cases of gastric hemorrhage the hemorrhage may finally stop of itself without surgical aid.

Münchener medizinische Wochenschrift

August 15, LVIII, No. 33, pp. 1753-1800

112 *"Puerperal Self-Infection." W. K. Zangemeister.
113 Behavior of Organs After Local Injections of Radium. (Ueber das Verhalten der Organe nach Radiumeinspritzungen am Ort der Wahl.) C. Ramsauer and A. Caan.
114 *Influence of Passive Exercises on the Circulation. (Einfluss passiver Bewegungen auf den Blutkreislauf.) E. Veiel and T. Zahn.
115 *Diagnostic Artificial Stasis Hemorrhages in the Skin. (Ueber Stauungsblutungen in der Haut.) F. W. Strauch.
116 Favorable Experiences with Hydrochloric Acid Treatment of Gout. (Zur Diagnose und Therapie der Gicht.) J. Schmidt.
117 *Name of the Syphilis Germ. (Benennung des Syphiliserregers nebst Bemerkungen über seine Stellung im System.) E. Hoffmann.
118 Elimination of Salvarsan in the Urine After Intravenous Injection. (Beginn und Dauer der Ausscheidung des Salvarsans durch den Urin nach intravenöser Injektion.) J. Abelin.
119 Jaundice with Fatal Outcome After Salvarsan Treatment. A. Hofmann.
120 Comparative Mortality of Breast-Fed Infants and Infants Fed on "Albumin Milk." A. Döblin.
121 *Influence of Emotions and Mind on Heart Action. (Zur Frage der psychischen Beeinflussung der Herzaktion.) R. Lederer and K. Stolte.
122 Technic for Local Anesthesia in Rhino-Laryngology. H. Reimers.
123 Postoperative Asphyxia After Pantopon-Scopolamin-Chloroform Anesthesia. C. Haeberlin.
124 *Treatment of Uncontrollable Vomiting of Pregnancy. R. Foerster.
125 Radium Ferment Therapy. K. Laubenheimer and A. Caan.
126 Phosphaturia. M. Oppenheim.

August 22, No. 34, pp. 1801-1848

127 Treatment of Cancer with Radio-Active Substances, Especially Actinium. V. Czerny and A. Caan.
128 Technic for Intravenous Salvarsan Treatment in Syphilis. E. E. Hüfler and J. Herbsmann.
129 *Case of Fatal Hemorrhagic Encephalitis Following Injection of Salvarsan in Syphilis. R. Fischer.
130 *Fatality Following Injection of Salvarsan in Syphilis. (Zur Kasuistik der Todesfälle nach Salvarsanbehandlung.) Kannengiesser.
131 *Acute Hemorrhagic Encephalitis Following Intravenous Injection of Salvarsan in Syphilis. J. Almkvist.
132 Experimental Research on Biology of Woman's Blood. (Weitere experimentelle Beiträge zur Biologie des Blutes in der Gestationsperiode des Weibes.) M. Neu.
133 Hypophysis Extract in Treatment of Osteomalacia. H. Bab.
134 Medicolegal Examination of Seminal Stains. (Ueber forensischen Spermanachweis.) J. Joesten.
135 Behavior in Animal Body of Organic Bromin Compounds. E. Magnus-Alsleben.
136 Choice of Tuberculin. (Wahl unter den verschiedenen Tuberkulinen.) K. Blümel.
137 *Technic for Intravenous Injection of Salvarsan. G. Knauer and A. Strauss.
138 Vasoconstricting Substances in Serum in Rachitis, Tetany and the Exudative Diathesis. S. Samelson.

112. **Puerperal Auto-Infection.**—Zangemeister declares that this term should be dropped in favor of "infection with endogenous germs." From this point of view the prophylaxis of puerperal infection is seen under a new aspect. It may be the result of (1) any spontaneous or artificial inoculation of these endogenous germs; (2) the production of fresh wounds, thus favoring the inoculation with the endogenous germs; (3) by importation of germs from without, and (4) by the inducing of fresh wounds, inoculating these germs. The obstetrician may thus be responsible for a puerperal infection in any of these four ways and prophylaxis should bear each of the four in mind. Among the dangers are interference with the escape of the discharges, stagnation of the lochia in the first days after delivery, or by palpation of the uterus or extra-uterine maneuvers the germ may be inoculated into already existing raw points. It is possible that germs introduced by the obstetrician's hand may not be inoculated into a wound at first, but erosions may occur later into which the germs may finally get, or the maneuvers may be with a germ-free hand or instrument, but the resulting wounds may become infected later by germs already present. These possibilities have been demonstrated again and again in his clinical experience and experiments on animals. His views in regard to infection from the germs already present should not lead to disregard of the dangers of infection from without, but they open our eyes to the hitherto unrecognized enemy from within and place new weapons in our hands to ward off this danger which we have heretofore run blindly into. His statistics in 220 cases show that the women had streptococcus infection quite as frequently when they had not been examined as when this had been done.

114. **Influence of Passive Exercises on the Circulation.**—Veiel and Zahn report study of the conditions in the circulation, during and after application of Büdingen's apparatus for "hill climbing in bed" (mentioned in THE JOURNAL, April 29, 1911, page 1302). The findings indicate that these passive exercises have the same favorable effect on the circulation as vigorous active exercise only in a lesser degree.

115. **Stasis Hemorrhage in the Skin.**—Strauch has been testing on 180 patients and 160 healthy persons the effect of application of a constricting band to the arm, which Rumpel and Leede have advocated as a test for the presence of scarlet fever by the resulting minute hemorrhages in the skin at the bend of the elbow which they regard as pathognomonic for scarlet fever. Strauch, however, found it very frequent in all kinds of diseases and in health; in 68 per cent. of nineteen cases of acute rheumatism, in 37 per cent. of eight cases of diphtheria, in 62 per cent. of typhoid, malaria, etc., and in nearly half of the healthy persons tested.

117. **The Syphilis Spirochete.**—Hoffmann cooperated with Schaudinn in the discovery of the *Spirochæta pallida* and he here presents evidence to show that this is the proper scientific name for it.

121. **Psychic Influence on the Heart Action.**—Lederer and Stolte have found that the heart sounds can be modified in children with unstable hearts after scarlet fever by merely threatening or frightening the children. The mere sight of instruments was enough to modify the heart sounds under the stethoscope and they believe that their experiences in this line sustain the assumption of the possibility of sudden arrest of the heart action under emotional stress.

124. **Vomiting of Pregnancy.**—Foerster suggests on the basis of clinical experience that changing the position of the gravid uterus in some slight measure might act on the uncontrollable vomiting of pregnancy, either at the time or in prophylaxis.

129. **Hemorrhagic Encephalitis Following Injection of Salvarsan.**—Fischer's patient was a physician only 40 years old, who had recently contracted syphilis in his professional work, the primary sore being in the nose. He was given an intravenous injection of 0.4 gm. salvarsan, followed by thirty mercurial inunctions. After an interval of five days, thus forty days after the first injection of salvarsan, the same amount was injected again and two and a half days afterward symptoms of severe acute hemorrhagic encephalitis developed, which was rapidly fatal. Fischer cites a case recently reported by Plötzl and Schüller in which a rapidly fatal hemorrhagic encephalitis developed in a woman in an early stage of syphilis under mercurial treatment. These and other facts observed lead Fischer to ascribe the encephalitis in his and similar cases to a process of anaphylaxis, but the further fact that this is observed only in syphilis, suggests that the disease is liable to entail certain molecular changes in the brain substance, possibly some modification in the colloids of the brain, which may also be at the base of the parasyphilitic affections. The danger of encephalitis seems to be greater with a second injection of the drug. Fischer adds that the resemblance to anaphylactic phenomena suggests the possibility of therapeutic influencing of the severe cases of encephalitis under these conditions by measures which have proved useful in combating anaphylactic phenomena in experiments on animals, especially the narcotic drugs.

130. **A Fatality After Salvarsan.**—In Kannengiesser's case epileptiform convulsions followed an intravenous injection of salvarsan four months after a subcutaneous injection of the same drug. The patient was a robust butcher of 29. After the convulsions consciousness did not return and the clonic cramps continued with delirium, until death occurred from aspiration pneumonia. The threatening symptoms developed three hours after the injection of salvarsan, but necropsy failed to disclose any satisfactory explanation of the case.

131. **Acute Hemorrhagic Encephalitis After Salvarsan.**—Almkvist reports his one fatality in the 184 cases in which he has given salvarsan. This patient was a man of 32, infected with syphilis in 1905, the primary manifestations soon yielding to mercurial treatment. On recurrence of mild local symptoms in 1910, another course of mercurial treatment was given and in February, 1911, he was given an intravenous injection of 0.6 gm. salvarsan. Symptoms of gastric and brain disturbance became evident the second and third days and at necropsy, six days after the salvarsan injection, the brain showed traces of acute hemorrhagic encephalitis, the blood escaping by diapedesis as in infectious processes. The brain may have been peculiarly sensitive in this patient as he had had much business worry and sought recreation and relief from insomnia in distractions of varied kinds.

137. **Technic for Intravenous Injections.**—Knauer calls attention to the vibratory thrill perceived by the fingers placed on the vein above the point where the injection is being made. If this vibratory thrill from the instreaming fluid is not perceived, the fluid is not entering the vein properly.

Wiener klinische Wochenschrift, Vienna

August 24, XXIV, No. 34, pp. 1207-1234

139 *Heart Disturbances Induced or Aggravated by Purgatives. (Hypodynamia cordis diarrhoica.) W. Jaworski.
140 Rare Defects in Speech. (Einige seltene Sprachfehler und partielle Rhinolalia aperta.) F. Neumann.
141 The Franzensbad Mineral Mud. (Das Franzensbader Eisen-Mineralmoor.) H. Kionka.

139. **Weakness of the Heart After Purging.**—Jaworski calls attention to the aggravation of heart disturbances or their first development in certain cases when attempts are made to relieve constipation medicinally. He calls the condition diarrheic hypodynamia of the heart, and reports five typical cases. They are observed comparatively often in private practice. Besides the loss of fluids in the diarrheic stools, the purge or laxative induces hyperemia and congestion in the abdominal organs and the blood is thus drained away from the skin, muscles and brain and the heart does not have enough blood to pump with. If the heart is in good condition there is no trouble, but if the myocardium is injured from any cause, symptoms of "reflex shock" develop; the external temperature declines; the skin is cool and pale, with more or less general weakness, dizziness, small soft pulse and apex beat, and slight heart sounds or arrhythmia. Treatment should aim to equalize the circulation, with hot-water bottles, nux vomica to contract the intestinal vessels, and strong coffee and tea to dilate the vessels in the brain and periphery. The movements of the intestines should be checked by some opium preparation and transudation into the bowels by some styptic. Persons inclined to weakness of the heart under these circumstances should be warned in particular against a systematic course of the widely advertised purgatives; Jaworski knows of cases in which this led to progressive fatal cardiac insufficiency. The elderly are in greater danger than the young on account of the tendency to arteriosclerosis. With advancing years the inhibiting and regulating influences grow weaker, so that the heart has to depend more and more exclusively on its own myo-automatism. The slightest injury of the myocardium then entails irregular action. He warns further that the same may be said of conditions in the acute infectious diseases in which the heart is suffering from the action of toxins; extreme caution is necessary in ordering purgatives and laxatives in order not to weaken the heart still further. These patients may ask to be purged to get rid of annoying tympanites, but he has often noticed that the face was pinched with other signs of collapse after the drug had operated. It is possible, he adds, that a purge might serve as a test for the diagnosis of latent cardiac insufficiency.

Zentralblatt für Chirurgie, Leipsic

August 12, XXXVIII, No. 32, pp. 1081-1112

142 Ribs as Material for Plastic Operations on Bones. (Die Rippen als Material zur Knochenautoplastik.) W. J. Dobrotworski.
143 *Subcutaneous Silk Drain in Treatment of Hydrocephalus. (Neue Methode der chirurgischen Behandlung der Hydrocephalie.) J. Marimon.
144 Care of Stump After Resection of the Stomach. (Zur Stumpfversorgung nach Magenresektion.) M. Wilms.

August 19, No. 33, pp. 1113-1144

145 *Operative Treatment of Exstrophy of the Bladder. (Operative Behandlung der angeborenen Blasenspalte.) V. Chlumsky.
146 *Camphorated Oil in Treatment of Peritonitis. (Anwendung des 1%igen Kampferöls bei Peritonitis und die adhäsionshemmende Wirkung desselben.) O. Hoehne.

143. **Operative Treatment of Hydrocephalus.**—Marimon aimed to drain the lateral ventricle permanently into the parotid gland which he considers particularly adapted for rapidly taking up the fluid thus emptied into it. He gives an illustrated description of the procedure as applied to an eight-months infant with extreme hydrocephalus, the head measuring 63 cm. in circumference, the eyeballs forced down so that the white sclera alone was visible. The operation induced a marked improvement after its application on one side; vision became normal and the head much reduced by the fifth week after the operation, but then the child succumbed to an intercurrent enteritis. He pierced into the ventricle with a long curved needle forcing it out through the skin below and drawing back the silk drain. The silk was then carried down through the subcutaneous cellular tissue into the middle of the parotid, which required several insertions of the needle. The technic is similar to that of Handley's method of providing new lymph routes in elephantiasis of the limb. The technic is simple but the oozing of cerebrospinal fluid through the needle holes retarded healing. Marimon had intended to apply the same operation on the other side.

145. **Treatment of Exstrophy of the Bladder.**—Chlumsky avoids the tendency to incontinence of the new bladder-wall, when it is formed by transplantation, by leaving to Nature the task of closing the bladder-wall. This insures durable closure. He separates the skin from the mucosa of the bladder and allows it to retract and waits patiently for the healing over of the wound thus made. There thus forms on the operated point a layer of epithelium, free from hairs, whose surface is further enlarged by the fact that the bladder being cut around is pressed forward like an umbilical hernia by the abdominal pressure. He has operated in this way in two cases and the bladder became closed in one and was on the way to closure in the other when the infant acquired bronchitis and the wound tore apart. Chlumsky states that the works on operative treatment of exstrophy of the bladder now number over 179, but the end-results of treatment to date by the usual methods still leave much to be desired. So he thinks there is a future for his simple technic for plastic closing of the bladder which in his successful case resulted in the production in time of a large bladder corresponding entirely to a normal one.

Zentralblatt für Gynäkologie, Leipsic

August 12, XXXV, No. 32, pp. 1145-1176

147 *Prophylaxis of Peritonitis. (Die Technik der anteoperativen Reizbehandlung des Peritoneums.) O. Hoehne.
148 Laceration of the Tentorium in New-Born Infants. (Tentoriumrisse beim Neugeborenen.) A. Bauereisen.
149 *Obstetric Protection of the Perineum. (Zur Dammschutzfrage.) J. Brock.

August 19, No. 33, pp. 1177-1200

150 Prophylaxis of Peritonitis. (Zur Frage der Prophylaxe der postoperativen Peritonitis durch Kampferölbehandlung.) O. Burckhardt.
151 *Pernicious Anemia in Pregnancy. (Die perniziöse Anämie in der Schwangerschaft und ihre Behandlung.) B. Bauereisen.
152 Universal Hydrops in the Fetus. (Zum Hydrops foetus universalis.) R. Teuffel.

August 26, No. 34, pp. 1201-1232

153 Technic for Cultivating Anaerobes. O. Burckhardt.
154 *Sign of Extra-Uterine Pregnancy. (Diagnostisches Zeichen zur Aufklärung der ausgetragenen Graviditas ectopia intraligament.) E. Scipiades.
155 Formation of Corpus Luteum. (Zur Corpus luteum-Bildung beim Menschen.) R. Meyer.
156 Action of Hypophysis Extract in Stimulating Contractions of Uterus. (Ueber Extractum hypophysis als Mittel zur Anregung der Wehentätigkeit.) A. Ross.

146-7. **Prophylaxis of Peritonitis.**—Hoehne refers to the injection of camphorated oil before a laparotomy to induce aseptic irritation of the peritoneum, and reports remarkably favorable results in over 120 cases. He describes the technic in detail; no anesthetic is required as the blunt needle is inserted through a minute incision, and 30 to 50 c.c. of the 1 or 10 per cent. camphorated oil are injected from one to four days before the operation, in "ante-operative irritation treatment" of the peritoneum, and presents evidence to prove

that the reaction thus induced may persist for two weeks or longer, even to seven weeks in one of his cases. According to experience to date, the exudation resulting from the irritation is gradually absorbed and never induces adhesions as long as it is aseptic.

149. **Protection of the Perineum.**—Brock noticed years ago that when the perineum tore during a forceps delivery the laceration corresponded to the blades of the forceps; the pressure from them had reduced the vitality of the tissues, so that they tore at these points. This fact suggested to him that even the pressure of the fingers, while striving to prevent injury during expulsion, may be the very factor which produces the tear. He now teaches always that the perineum should be given time to stretch spontaneously, and the head should be pushed gently back until the maternal soft parts have stretched gradually to their utmost. The accoucheur's hands should not touch the perineum but merely hold back the head, the fingers not curving but spread more nearly flat until the wrist touches the back of the child's head; then, by slightly lifting the chin, the lowest portion of the face can be released. He calls this the passive or expectant method of protecting the perineum, and remarks that while it is far from being ideal, yet it avoids the dangers of the usual methods of pressure on the perineum from without.

151. **Pernicious Anemia in Pregnancy.**—Bauereisen reports two cases of pernicious anemia in pregnant women in which he cured the patients by daily subcutaneous or intramuscular injections of 5 or 10 c.c. of whole blood, seven injections being given in one and five in the other case. He commends this method for its simplicity and advises its wide adoption in general practice. The one yielding the blood sits near the patient; as soon as the blood is taken from a vein in the arm it is injected into the patient when still warm and the spot lightly massaged. The effect seems to be the same as when large amounts of defibrinated blood are used.

154. **Diagnosis of Extra-Uterine Pregnancy.**—Scipiades refers to a case of extra-uterine pregnancy in the broad ligament which had been carried to term. The condition was correctly diagnosed by the asymmetrical location of the tumor and its extension deep into the pelvis, while a cord-like structure could be palpated between the wall of the uterus and the tumor, and the surface of the tumor was smooth and sharply outlined.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 3, XXXII, No. 93, pp. 981-986

157 *Syphilids and Scarlet Fever. T. Silvestri.

August 6, No. 94, pp. 987-1002

158 Diagnosis of Cholera. E. Bertarelli.
159 Importance for Diagnosis and Prognosis of the Mononucleara in the Blood. (La genesi endoteliale dei mononucleati del sangue. Sua importanza diagnostica e pronostica.) V. Patella and D. N. Aperlo.
160 Determination of Tubercle Bacilli in the Stools. L. Cecconi.

August 8, No. 95, pp. 1003-1010

161 Digitalis in Emergencies. (Le iniezioni digitaliche d'urgenza.) R. Massalongo and U. Gasparini.

August 10, No. 96, pp. 1011-1018

162 Research on Stomach Functioning. (Sui metodi di esame della funzione gastrica.) G. Chiabrera.

August 13, No. 97, pp. 1019-1034

163 Epithelioma Developing on Scars of Burns. (Sopra gli epiteliomi sviluppati su cicatrici da scottature.) E. Amati

August 15, No. 98, pp. 1035-1042

164 Echinococcus Disease of the Liver. U. Sarri.

August 20, No. 100, pp. 1051-1066

165 *Reflex Phenomena in Gynecologic Disease. (La fenomenologia riflessa nelle lesioni dell'apparato genitale femminile.) L. M. Bossi.
166 *Management of Fracture of the Clavicle. (Un nuovo apparecchio per la riduzione della frattura della clavicola.) C. Zatti.

August 22, No. 101, pp. 1067-1074

167 Collapse Under Stovain. (Collasso grave da stovaina.) O. Ortali.

August 24, No. 102, pp. 1075-1082

168 Vicarious Menstrual Hemorrhage in the Bladder. (Contributo clinico sull'emorragia vesicale per mestruazione deviata.) F. Cuturi.

157. **Syphilis and Scarlet Fever.**—Silvestri has been impressed with the way in which a pre-existing syphilis modifies certain other diseases and affords a favorable soil for the development of tuberculosis, which runs a grave course as a rule in syphilitics. In three recent cases of syphilis in his practice intercurrent typhoid had a particularly rapid and malignant course as also pneumonia and erysipelas in other syphilitics. On the other hand, the syphilis has been favorably modified by an intercurrent scarlet fever in three of his cases, which he reports in detail. In the first a child with severe manifestations of inherited syphilis began to thrive and has been in comparative health since after an attack of scarlet fever at the age of 4; the same was also observed in another syphilitic child. In his third case a man of 45 had long been suffering from severe manifestations in the third phase of syphilis, including disturbances suggesting gastric ulcer. An intercurrent scarlet fever transformed conditions so that after recovery from the latter there were no further disturbances from the syphilis, even the Wassermann reaction having become negative. The intercurrent infection seems to paralyze if it does not destroy the still existent spirochetes.

165. **Reflex Phenomena from Gynecologic Lesions.**—Bossi declares that no woman should be committed to an insane asylum until after thorough examination by a gynecologist, as frequently the mental disturbances are merely reflex phenomena from some curable affection of the genital organs. He reports three typical cases which sustain this view. The chronic tendency to irritability and melancholia or a recurring tendency to mania permanently subsided after operative and other measures to cure inflammation in the uterus or cervix or both, with or without rigidity of the cervix, and, in a fourth case, extreme anteflexion of the uterus with a tendency to atrophy.

166. **Brace for Fracture of the Clavicle.**—Zatti uses a rectangular sheet of metal, about 30 cm. long by 12 wide, bending it up to form a ridge in the center to fit over the spine. The plate is held in place across the back by a starched bandage wound in figure 8 folds seven times around the shoulders and across the back, as he shows in four illustrations. The front of the chest is left free and respiration is promoted instead of hindered, while the fractured bone is effectually immobilized and the patient can rest easily in bed.

Policlinico, Rome

July 30, XVIII, No. 31, pp. 969-1000

169 Hernia from Standpoint of Industrial Insurance. (L'ernia considerata in rapporto con la legge degli infortuni sul lavoro.) S. Dieg. Commenced in No. 30.

August 6, No. 32, pp. 1001-1032

170 Alimentary Disturbances in Infants. (I disturbi della nutrizione nel lattante.) R. Fua.

August 13, No. 33, pp. 1033-1064

171 Proteolytic Ferments in Stools of Breast-Fed Infants. A. Filia.
172 *Sterilization of Uterus by Hydrogen Dioxid. (La disinfezione della cavita uterina per mezzo delle irrigazioni di acqua ossigenata, nell'infezione puerperale e negl'interventi per raschiamento e per rimozione di residui di aborto.) F. Grandoni.

August 20, No. 34, pp. 1065-1096

173 Mandelbaum's Thread Reaction in Typhoid. (Metodo facile e rapido per la sierodiagnosi del tifo.) V. Zevi and G. Sabarini.
174 Tincture of Iodin in Treatment of Burns. (La tintura di iodio al 2 per cento nelle scottature in genere.) A. Talassano.

August 27, No. 35, pp. 1097-1128

175 Influenza During Pregnancy and the Puerperium. U. Rosi.

August, Medical Section No. 8, pp. 333-380

176 Two Tumors in the Brain. (Osservazioni cliniche ed anatomo-patologiche sopra un caso di duplice tumore dell'encefalo.) F. Costantini.
177 The Mechanism of Hearing. (La teoria dell' udizione piu consentanea alla compleasa morfologia dell'organo del Corti.) B. Bocci.
178 Post-Tabetic Paralytic Dementia. P. Ciuffini. Commenced in No. 7.

August, Surgical Section No. 8, pp. 337-384

179 Some Rare Tumors in the Peritoneum. P. Sabella. Commenced in No. 7.

172. **Hydrogen Dioxid in Sterilization of the Infected Uterus.**—Grandoni remarks that it was with considerable hesitation that he first used a solution of hydrogen dioxid for irrigation of the infected puerperal uterus, fearing gas embolism from the nascent oxygen. But his experience in a number of serious cases in which this measure was about the last resort, gave unexpectedly favorable results and has con-

vinced him that these fears are practically groundless. The foam from the nascent oxygen does not seem to have force enough to penetrate into the tubes or open blood-vessels. He cites the details of seven cases emphasizing the prompt way in which the conditions in the infected uterus returned to approximately normal. In the cases in which the infectious process was restricted to the uterus, irrigation with the dioxid conquered it at once. Even when the condition was one of true puerperal septicemia, local irrigation with hydrogen dioxid effectually supplemented the intravenous injection of a solution of bichlorid of mercury, according to Baccelli's technic, when conditions were apparently desperate.

Riforma Medica, Naples

August 7, XXVII, No. 32, pp. 869-896

180 Clinical Importance of Relative Arterial Hypertension in Artery of the Foot. (Sul valore clinico della ipertensione arteriosa relativa nella pedidia.) R. Secchi.
181 Sarcoma in Bed of Kidney. (Rarissimo caso di lipo-fibro-sarcoma dell'area adiposa perirenale.) L. Gaiardoni.

August 14, No. 33, pp. 897-924

182 Traumatic Thrombophlebitis and Colon Bacillus Periostitis. G. Carere.

August 21, No. 34, pp. 925-952

183 *Intestinal Lesions from Foreign Bodies. G. Razzaboni.
184 Inflammation of Meckel's Diverticulum and Intestinal Stenosis. C. Rinaldo.
185 Rachitis. (Del rachitismo.) T. Silvestri. Commenced in No. 33.

183. **Dangers of Foreign Bodies in the Intestines.**—In Razzaboni's case an elderly woman had had an easily reduced femoral hernia for thirty years, when it became suddenly irreducible and painful. Attempts at mild taxis proving ineffectual, herniotomy was done and with apparent success, but in a few hours fecal vomiting developed with other signs of abdominal mischief, soon fatal. Necropsy revealed the presence of two fishbones in the colon which they had perforated at both ends of the bones. He believes that the perforation was the result of his efforts at taxis or during the operation, and warns that the unsuspected presence of a foreign body may singularly complicate an operation for hernia. The case is still another argument against taxis of hernias.

Norsk Magazin for Lægevidenskaben, Christiania

August, LXXII, No. 8, pp. 857-936

186 Inherited Disease in Light of Mendel's Theory. (Arvesygdomme i lys av Mendelismen.) R. Vogt.
187 Suture of Cervical Nerve. (Et tilfælde av nervesutur.) P. E. Giertsen.
188 *Benign Tumors in Stomach Simulating Cancer. (Kræftlignende svulster i mavesaekken.) H. Schilling.

188. **Gastric Ulcers Simulating Cancer.**—Schilling reports a case of this kind in a man of 55. On opening the stomach the diagnosis of cancer seemed positive and the stomach was resected, but the microscope showed that the very large tumor in the larger curvature, adherent to the transverse colon, was a fibrous connective-tissue growth. But at the same time a minute tumor was found near the pylorus which proved apparently to be a true solid cancer. The patient had cause to rejoice over the mistaken diagnosis as seldom or never has a cancer in the stomach been discovered and removed at such an early stage. Syphilis and tuberculosis are often the cause of supposed malignant disease of the stomach; Schilling operated a year ago on a woman of 30, making a gastro-enterostomy on account of a gastric tumor which was undoubtedly of tuberculosis origin, as there was a similar tumor in the cecum and the appendix was found on removal to contain a local tuberculous process. The patient has been clinically cured by the operation. A stomach affected with fibrous induration may also simulate cancer and he adds the history of a case of the kind, the signs of stenosis of the pylorus in a woman of 60 finally compelling resection of the stomach, after which the woman rapidly regained strength and weight. After five years of health symptoms returned and a tumor was found at the point of the anastomosis, simulating cancer, but the microscope revealed merely fibrous tissue. The patient was again restored to health by a further resection, but there was suppuration later in the wound and a fistula into the transverse colon with adhesions, finally compelling a third operation by the end of the year. After an anastomosis excluding the site of the lesion in the transverse colon, the fistula soon healed and the patient has been in the best of health during the six years since.

Hygiea, Stockholm

July, LXXIII, No. 7, pp. 785-908

189 *Comparative Importance of Different Operative Measures for Genital Prolapse. (Om värdet af de olika operationsmetoderna vid genitalprolaps.) F. Westermark.
190 Torsion of the Uterus: Two Cases. J. Olow.
191 Endemic Goiter in Sweden. (Endemisk struma i Husby distrikt.) G. Fjellander.

189. **Operative Treatment for Genital Prolapse in Sweden.**—Westermark here brings down to date his previous communication on this subject in 1897, when he tabulated the details and outcome of operative treatment by various Swedish surgeons in 140 cases of severe prolapse of the vagina and 456 of the uterus. The figures since that date include 411 cases of prolapse of the vagina and 817 of the uterus. All this material is sifted and the end-results tabulated and compared with the various technics used. Westermark's preferred method of treating prolapse of the uterus by lateral colporrhapy (published in 1892) was applied in 255 cases of prolapse of the uterus; 173 of the patients have been reexamined recently. A recurrence of trouble was discovered in only twelve cases, that is, the operation was entirely successful in 93.1 per cent. The recurrence was generally in the form of a cystocele. The entire statistics compare favorably with those in other lands.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

TICKS. A MONOGRAPH OF THE IXODOIDEA. By George H. F. Nuttall, M.A., M.D., Ph.D., Fellow of Magdalene College; Cecil Warburton, M.A., F.Z.S., Christ's College; W. F. Cooper, B.A., F.Z.S., F.L.S., and L. E. Robinson, A.R.C.Sc. (Lond.), of the Cooper Laboratory for Economic Research, Watford. Part II by George H. F. Nuttall and Cecil Warburton. Price, 12 shillings net. Pp. 105-348, with illustrations. May, 1911. Bibliography of the Ixodoidea by George H. F. Nuttall, F.R.S., L. E. Robinson and W. F. Cooper. Price, 6 shillings net. Pp. 67. July, 1911. Paper. Cambridge. University Press, 1911.

PRACTICAL PATHOLOGY. A MANUAL OF AUTOPSY AND LABORATORY TECHNIC. FOR STUDENTS AND PHYSICIANS. By Aldred Scott Warthin, Ph.D., M.D., Professor of Pathology and Director of the Pathologic Laboratories in the University of Michigan, Ann Arbor. Second Edition. Cloth. Price, $3. Pp. 321, with 55 illustrations. Ann Arbor: George Wahr, 1911.

REASON AND SENTIMENT. An Address Delivered in the Aula of the University of Berne, March 3, 1910. By Dr. Paul Dubois, Professor of Neuropathology at the University of Berne. Authorized Translation by Edward G. Richards. Cloth. Price, 50 cents net. Pp. 82. New York: Funk & Wagnalls Co., 1911.

TECHNIK DER THORAXCHIRURGIE. Von Dr. F. Sauerbruch, Professor, Direktor der Chirurg. Universitätsklinik Zurich und Dr. E. D. Schumacher, Privatdozent, Assistent an der Chirurg. Universitätsklinik Zurich. Cloth. Price, 24 marks. Pp. 97, with 73 illustrations. Berlin: Julius Springer, 1911.

PROCEEDINGS CONFERENCE ON MILK PROBLEMS UNDER THE AUSPICES OF THE NEW YORK MILK COMMITTEE, Dec. 2 and 3, 1910. At Assembly Hall, United Charities Building, New York. Paper. Price, $1. Pp. 200. New York: New York Milk Committee, 105 E. Twenty-Second Street, 1911.

MINNESOTA MUSHROOMS, BOOKLET IV OF MINNESOTA PLANT STUDIES OF UNIVERSITY OF MINNESOTA, MINNEAPOLIS. By Frederic E. Clements, Professor of Botany and State Botanist. Paper. Price, to Citizens of Minnesota, free; to Others, 50 cents. Pp. 169, with 124 illustrations.

HOW TO BE HEATHY. By J. Halpenny, M.A., M.D., Surgeon to the Winnipeg General Hospital, and Lilian B. Ireland, Manitoba Normal School. Cloth. Price, 50 cents. Pp. 242, with illustrations. Toronto: Educational Book Co., (1911).

AUTO-INOCULATION IN PULMONARY TUBERCULOSIS. By Marcus Paterson, M.B., B.S., M.R.C.S., Medical Superintendent at Brompton Hospital Sanatorium, Frimley. Cloth. Price, 21 shillings. Pp. 236. London: James Nisbet & Co., 1911.

ASSOCIATION OF AMERICAN MEDICAL COLLEGES. Proceedings of the Twenty-First Annual Meeting, held in Chicago, Feb. 27-28, 1911. Paper. Pp. 94. Fred C. Zapffe, Secretary, Chicago.

TWENTY-EIGHTH ANNUAL REPORT OF THE BOARD OF TRUSTEES, SOLDIERS' HOME IN MASSACHUSETTS AT CHELSEA FOR THE YEAR ENDING JUNE 30, 1910. Paper. Pp. 70. 1910.

REPORT OF THE BOARD OF HEALTH OF THE CITY OF SALEM TO THE CITY COUNCIL, DECEMBER, 1910. Paper. Pp. 31. Salem, Mass., 1911.

NORSK MEDICIN I HUNDRED AAR. Ved S. Laache. Paper. Pp. 289, with illustrations. Kristiania: Steen'ske Bogtrykkeri, 1911.